

DRAFT CONSTRUCTION DRAWINGS
FOR
JEFF ROBERTSON PARK
STORMWATER WETLAND SITE
PLAN #15-0014

NORFOLK, VA
JULY 31, 2015

UTILITY AND GOVERNING AGENCIES CONTACT LIST

WATER DISTRIBUTION AND
WASTERWATER COLLECTION COMPNAY
CITY OF NORFOLK
DEPARTMENT OF UTILITIES
NORFOLK, VIRGINIA 23501
TEL: (757) 664-6768

CABLE COMPANY
COX COMMUNICATIONS
225 CLEARFIELD AVE
VIRGINIA BEACH, VA 23462
TEL: (757) 369-4519

PUBLIC TRANSPORTATION
HAMPTON ROADS TRANSIT
1500 MONTICELLO AVENUE
NORFOLK, VA 23510
TEL: (757) 222-6000
EXT. 6232

WASTEWATER COMPANY
HAMPTON ROADS SANITATION DISTRICT
1436 AIR RAIL AVENUE
VIRGINIA BEACH, VIRGINIA 23455
TEL: (757) 460-7072

POWER COMPANY
DOMINION VIRGINIA POWER
1601 HAMILTON AVENUE
PORTSMOUTH, VA 23707
TEL: (757) 393-3834

NORFOLK SMART TRAFFIC CENTER
CITY OF NORFOLK
TRANSPORTATION DIVISION
810 UNION ST.
ROOM 200
NORFOLK, VIRGINIA 23510
TEL: (757) 664-7304

GAS COMPANY
VIRGINIA NATURAL GAS
5100 E.VIRGINIA BEACH BLVD.
NORFOLK, VA 23502
TEL: (757) 616-7529

LOCAL ENGINEERING OFFICE
CITY OF NORFOLK PUBLIC WORKS
810 UNION ST.
ROOM 700
NORFOLK, VIRGINIA 23510
TEL: (757) 664-4655

OWNER:

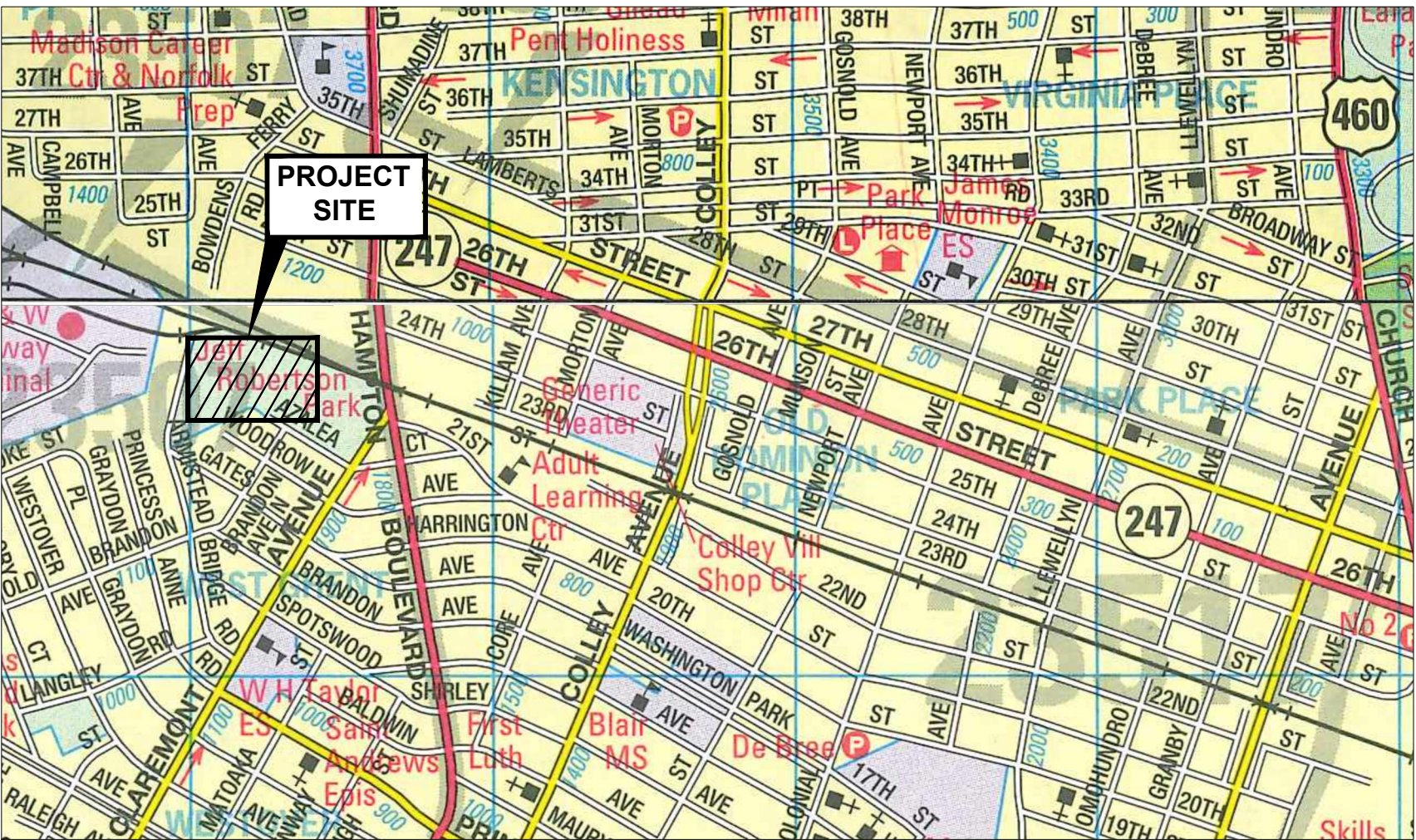
CITY OF NORFOLK
DEPARTMENT OF PUBLIC WORKS - OPERATIONS
2233 MCKANN AVE
NORFOLK, VA 23509
TEL: (757) 823-4048
CONTACT: JUSTIN SHAFER

ENGINEER:

KIMLEY-HORN AND ASSOCIATES, INC.
4500 MAIN STREET
SUITE 500
VIRGINIA BEACH, VIRGINIA 23462
TEL: (757) 213-8600
CONTACT: DAREN PAIT, P.E., CFM

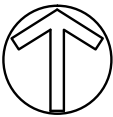
SURVEYOR:

NXL CONSTRUCTION SERVICES
716 J CLYDE MORRIS BOULEVARD
SUITE A
NEWPORT NEWS, VIRGINIA 23601
TEL: (757) 596-4005
CONTACT: TODD FRENCH, LS



VICINITY MAP

1" = 1000'
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SITE NOTES

- CONTRACTOR SHALL CONTACT CITY OF NORFOLK, ENVIRONMENTAL STORM WATER MANAGEMENT AT (757) 823-4089 48 HOURS (MINIMUM) PRIOR TO LAND DISTURBANCE TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE AND INSPECTION REQUIREMENT WHEN A BMP IS PROPOSED AND TIE-IN TO CITY STORM DRAIN SYSTEM.
- THE CONTRACTOR SHALL CONTACT THE CITY OF NORFOLK, BUREAU OF ENVIRONMENTAL SERVICES AT (757) 664-4368 AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY SO THAT THE LAND DISTURBING PERMIT CAN BE ISSUED AND A PRE-CONSTRUCTION CONFERENCE CAN BE SCHEDULED.
- THIS PROPERTY IS LOCATED WITHIN A CITY OF NORFOLK CBPA DESIGNATED INTENSITY DEVELOPED AREA. (IDA)
- ALL VEGETATION, WOODY, OR OTHERWISE, EXCEPT LAWN, ORNAMENTAL GRASS AND FLOWERS LESS THAN TWENTY-FOUR (24) INCHES IN HEIGHT WITHIN THE 100' CBPA BUFFER REQUIRES A PERMIT FOR REMOVAL, ALTERATION, OR WORK WITHIN THE CRITICAL ROOT ZONE FROM BUREAU OF ENVIRONMENTAL SERVICES (757) 664-4751 WITH SUBSEQUENT MITIGATION REQUIREMENTS.
- THIS SITE REQUIRES A VSMP GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS REQUIRED TO SECURE PERMIT COVERAGE FROM THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE REQUIRED BY THE PROJECT BY SUBMITTING A COMPLETED REGISTRATION STATEMENT AND PAYING THE APPROPRIATE PERMIT FEE TO THE CITY OF NORFOLK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING PERMIT COMPLIANCE DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO INSPECTIONS, SWPPP UPDATES, ETC. CONTACT NORFOLK ENVIRONMENTAL SERVICES AT (757) 664-4368 FOR FURTHER INFORMATION.
- CONTRACTOR SHALL PERFORM NO WORK IN RIGHT OF WAY. CONTRACTOR SHALL NOT USE THE RIGHT OF WAY AS A LAYDOWN OR STORAGE FOR EQUIPMENT.
- THE ROADWAY AND WALKWAY ACCESS TO THE PARK SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

SITE SUMMARY

SITE ADDRESS: E S ARMISTEAD BRIDGE ROAD
PARCEL GPIN: 1428489047
TAX ACCOUNT NUMBER: 79082410
CENTER OF PROJECT: LAT 36.873240, LONG -76.305682

DEVELOPMENT INFORMATION

TOTAL PARCEL AREA: 5.51 AC
TOTAL DISTURBED AREA: 1.71 AC
ZONING/EXISTING USE: OSP
ZONING/PROPOSED USE: OSP
ADJACENT PROPERTY ZONING: R-8, OSP, I-3

FLOOD INFORMATION:

A PORTION OF THE SUBJECT PROPERTY LIES WITHIN FLOOD ZONE "AE". THESE AREAS ARE SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD WITH BASE FLOOD ELEVATION 7.6. A PORTION OF THE SUBJECT PROPERTY LIES WITHIN FLOOD ZONE SHADED "X". THESE AREAS ARE SUBJECT TO INUNDATION BY THE 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE, AND AREAS PROTECT BY LEVEES FROM 1% ANNUAL CHANCE FLOOD. DETERMINED BY FLOOD INSURANCE RATE MAP 5101040130G(MAP DATE: DECEMBER 16, 2014)

BMP SUMMARY:

EXISTING IMPERVIOUS COVER (AC): 0.14
PROPOSED IMPERVIOUS COVER (AC): 0.11
OWNERSHIP OF BMP: CITY OF NORFOLK
TYPE OF BMP: WETLAND
STORAGE REQUIRED FOR WATER QUALITY (C.F.): 24,504
STORAGE PROVIDED FOR WATER QUALITY (C.F.): 18,730
DRAINAGE AREA TREATED BY PROPOSED BMP (S.F.): 639,461
2 YEAR STORM WATER SURFACE ELEVATION: 5.0'
10 YEAR STORM WATER SURFACE ELEVATION: 5.3'
100 YEAR STORM WATER SURFACE ELEVATION: 6.1'

RESPONSIBLE LAND DISTURBER DESIGNATION

THE FOLLOWING PERSON, _____ IS IDENTIFIED AS THE RESPONSIBLE LAND DISTURBER WHO WILL BE IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT THE LAND DISTURBING ACTIVITY. THIS PERSON MEETS THE APPLICABLE REQUIREMENTS OF VIRGINIA CODE SECTION 10.1-563 AND 10.1-566 BY VIRTUE OF THE FOLLOWING (CHECK THE CATEGORY THAT APPLIES):

- ☒ RESPONSIBLE LAND DISTURBER CERTIFICATE
☐ DCR CERTIFICATION FOR COMBINED ADMINISTRATOR, ADMINISTRATOR, PLAN REVIEWER, INSPECTOR, OR CONTRACTOR
☐ VA PROFESSIONAL ENGINEER, LAND SURVEYOR, LANDSCAPE ARCHITECT OR ARCHITECT

UPON AWARD OF THE CONTRACT AND BEFORE ANY LAND DISTURBING ACTIVITY CAN BEGIN, THE CONTRACTOR SHALL EXECUTE AND SUBMIT A RESPONSIBLE LAND DISTURBER NOTIFICATION FORM TO:

THE DEPARTMENT OF PLANNING, ENVIRONMENTAL SERVICES
RM. 508, CITY HALL BUILDING
810 UNION STREET
NORFOLK, VA 23510
TEL: (757) 664-4368

SEQUENCE OF CONSTRUCTION:

- THE CONTRACTOR SHALL CALL MISS UTILITY 72 HOURS PRIOR TO ANY EXCAVATION WORK.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST REVISION, AND CITY ORDINANCES.
 - CONTRACTOR SHALL ENSURE THAT THE EXISTING POND, SWALES, AND CONNECTING PIPES REMAIN FUNCTIONAL UNTIL INSTALLATION OF STORMWATER IMPROVEMENTS ARE COMPLETE.
 - THE TEMPORARY CONSTRUCTION ENTRANCE MAY REQUIRE PARTIAL FILLING OF THE EXISTING POND. CONTRACTOR SHALL ENSURE THAT ALL POND INLETS AND OUTFALLS REMAIN FUNCTIONAL.
 - ROADWAY AND WALKWAY ACCESS TO THE PARK SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
- DUE TO THE NATURE OF THIS PROJECT AND RELATIVELY SHORT CONSTRUCTION PERIOD, EROSION AND SEDIMENT CONTROL SHALL BE HANDLED IN THE FOLLOWING MANNER:
 - ALL GRADING WORK SHALL COMMENCE FROM UPSTREAM TO DOWNSTREAM, AVOIDING THE CHANCE OF AN UNSTABILIZED SECTION CARRYING FLOW AND THEREFORE MOVING SEDIMENT.
 - THE CONTRACTOR SHALL STABILIZE THE SWALES WITH COIR FIBER MATTING AS SHOWN ON SHEET 7. BEFORE COIR FIBER MATTING HAS BEEN PLACED, THE TEMPORARY OR PERMANENT SEED MIX SHALL BE INCORPORATED WITH THE NEWLY GRADED SUBSTRATE.
- HAND CLEARING OPERATIONS SHALL PROCEED AS NECESSARY TO FACILITATE EARTHWORK ACTIVITIES. ONLY AREAS NECESSARY TO THE COMPLETION OF THE PROJECT SHALL BE CLEARED. ALL EXISTING WOODY VEGETATION SCHEDULED TO REMAIN SHALL BE LEFT UNDISTURBED.
- GRADING OPERATIONS SHALL COMMENCE AND BE COMPLETED AS SPECIFIED ON THE GRADING PLANS & DETAILS.
- SEEDING OPERATIONS SHALL COMMENCE AND BE COMPLETED AS SPECIFIED ON THE PLANTING PLANS & DETAILS.
- SEEDING AREAS SHALL BE INSPECTED BY THE PROJECT DESIGNER AT THE COMPLETION OF THE SEEDING OPERATIONS AND ACCEPTED SUBJECT TO COMPLIANCE WITH MATERIALS AND INSTALLATION REQUIREMENTS.
- PLANTING OF TREES, SHRUBS, AND HERBACEOUS PLUGS SHALL COMMENCE AND BE COMPLETED AS SPECIFIED ON THE PLANTING PLANS AND DETAILS.
- THE PROJECT DESIGNER SHALL PERFORM A FINAL SITE INSPECTION. ALL COMMENTS RECEIVED BY THE CONTRACTOR SHALL BE ADDRESSED PRIOR TO THE COMMENCEMENT OF CLEAN-UP ACTIVITIES.
- THE CONTRACTOR SHALL COMMENCE WITH THE FINAL CLEAN-UP OF THE PROJECT SITE.

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APPROVED FOR CONSTRUCTION	DATE	PLAN STATUS		
		DATE	INITIAL	DESCRIPTION

Plotted By: Konf, Kevin Sheet Set: Jeff Robertson Stormwater Wetland - 116057057 Layout: TITLE SHEET October 26, 2015 03:10:39pm K:\VAB_ENV\116057057 Blue Bird Park\CAAD\Plan Sheets\1 TITLE SHEET.dwg
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	1ST CITY SUBMITTAL	04/10/15	DMP
	2ND CITY SUBMITTAL	07/31/15	DMP
No.	REVISIONS	DATE	BY

Kimley»Horn

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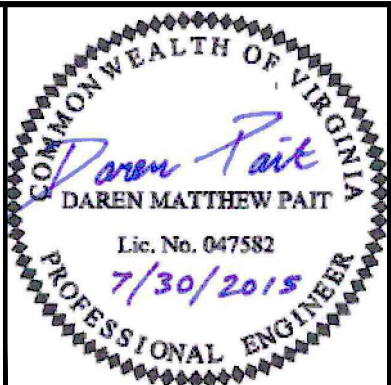
4500 MAIN STREET, SUITE 500, VIRGINIA BEACH, VA 23462
PHONE: 757-213-8600 FAX: 757-213-8601
WWW.KIMLEY-HORN.COM

KHA PROJECT 116057057
DATE JULY 31, 2015
SCALE AS SHOWN
DESIGNED BY RAW
DRAWN BY KCK
CHECKED BY DMP

JEFF ROBERTSON PARK STORMWATER
WETLAND SITE PLAN #15-0014
PREPARED FOR
CITY OF NORFOLK

NORFOLK

VA



TITLE SHEET

SHEET NUMBER

1

Plotted By:Konf, Kevin Sheet Set:Jeff Robertson Stormwater Wetland - 116057057 Layout:GENERAL NOTES AND SYMBOLOLOGY October 26, 2015 03:10:50pm K:\VAB_ENVA\116057057 Blue Bird Park\CADD\Plan Sheets\2 SYMBOLOLOGY AND GENERAL NOTES.dwg
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GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, DRIVEWAY, WALKS, CURBS, TRAFFIC SIGNAL DEVICES, PAVEMENT MARKINGS, ETC. THAT MAY BE CUT, OR THAT ARE DAMAGED DURING CONSTRUCTION AT THEIR OWN EXPENSE.
2. THE CONSTRUCTION SITE, ADJACENT AREAS, AND RIGHT-OF-WAYS SHALL BE KEPT CLEAN AND CLEAR OF CONSTRUCTION DEBRIS AT ALL TIMES.
3. THE CONTRACTOR SHALL ADHERE TO THE HAMPTON ROADS PLANNING DISTRICT COMMISSION REGIONAL SPECIFICATIONS WITH THE CITY OF NORFOLK MODIFICATIONS UNLESS OTHERWISE INDICATED ON THE PLANS.
4. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO PRE-CONSTRUCTION CONDITIONS OR BETTER. ANY DAMAGE CAUSED BY THE CONTRACTOR DURING CONSTRUCTION OPERATIONS UNDER THIS CONTRACT SHALL BE REPAIRED AND/OR REPLACED TO ORIGINAL CONDITION BY THE CONTRACTOR AT HIS OWN EXPENSE.
5. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS AND DISPOSE OF OFF-SITE IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS AND REGULATIONS.
6. THE CONTRACTOR SHALL COORDINATE WITH OWNER OR OWNERS REPRESENTATIVE ON STORAGE OF EQUIPMENT AND SUPPLIES.
7. THE CONTRACTOR SHALL PROVIDE ALL PROTECTION MEASURES AND DEVICES NECESSARY TO PROTECT THE PROPERTY, ADJACENT PROPERTIES, AND THE GENERAL PUBLIC DURING THE DURATION OF THE PROJECT AND COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
8. THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING OR PROTECTING HIS EQUIPMENT DURING FLOOD EVENTS. THE CONTRACTOR SHOULD BE AWARE THAT THE SITE LIES WITHIN THE 100 YEAR FLOODPLAIN WHERE THE WATER LEVEL WILL RISE UP TO ELEVATION 7.6' (NAVD88) DURING THE 100 YEAR FLOOD EVENT. DURING SURGE EVENTS SUCH AS A NOR-EASTER, WATER CAN SURGE THROUGH THE EXISTING CULVERT AT ELEVATION 3.25' (NAVD88). ONCE THE PROPOSED OUTFALL STRUCTURE IS INSTALLED, SURGE EVENTS WILL NOT BACK FLOW THROUGH THE PROPOSED RISER STRUCTURE UNTIL FLOOD ELEVATIONS REACH ELEVATION 4.5' (NAVD88). AT THIS ELEVATION WATER WILL BEGIN TO BACK FLOW THROUGH THE RISER STRUCTURES ORIFICE, AND CAN BACK FLOW THROUGH THE RISER'S PRIMARY WEIR AT ELEVATION 5.5' (NAVD88).
9. ALL SLOPES WITHIN THE RIGHT-OF-WAY OR CITY EASEMENTS SHALL BE TOPSOIL AND OVER-SEEDED IN ACCORDANCE WITH THE APPLICABLE VDOT SPECIFICATIONS AND SHALL NOT EXCEED MAXIMUM SLOPE OF 2:1.

HRSD STANDARD CONSTRUCTION NOTES:

1. ALL PERSONS MUST CONTACT MISS UTILITY AT PHONE 1-800-552-7001 A MINIMUM OF 48 HOURS PRIOR TO EXCAVATION.
2. PROVIDE A MINIMUM OF 15 WORKING DAYS PRIOR TO EXCAVATION OF, OR IN VICINITY OF, HRSD INFRASTRUCTURE. MISS UTILITY CALLS DO NOT FULFILL THIS REQUIREMENT. CONTACT HAMPTON ROADS SANITATION DISTRICT (HRSD) INTERCEPTOR OPERATIONS DURING BUSINESS HOURS OFFICE:(757)460-7072 EMERGENCY (AFTER HOURS) OFFICE:(757)460-3200
3. FIELD VERIFY THE ELEVATION OF THE HRSD INFRASTRUCTURE AT THE PROPOSED CROSSING LOCATION. THESE ELEVATIONS SHALL BE FORWARDED TO THE APPROPRIATE HRSD ENGINEER PRIOR TO CONSTRUCTION.
4. PROVIDE A MINIMUM VERTICAL SEPARATION OF 18 INCHES FROM HRSD INFRASTRUCTURE, ANY PROPOSED DEVIATION FROM THE MINIMUM SEPARATION OF 18 INCHES WILL REQUIRE REVIEW AND APPROVAL BY HRSD ENGINEERING PRIOR TO CONSTRUCTION.
5. PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 5 FEET FROM HRSD INFRASTRUCTURE. ANY PROPOSED DEVIATION FROM THE MINIMUM SEPARATION OF 5 FEET WILL REQUIRE REVIEW AND APPROVAL BY HRSD ENGINEERING PRIOR TO CONSTRUCTION.
6. PROPOSED CROSSINGS SHALL NOT BE PERMITTED AT EXISTING JOINT LOCATIONS UNLESS APPROVED BY APPROPRIATE HRSD ENGINEER.
7. IF THE HRSD INFRASTRUCTURE WILL BE EXPOSED DURING CONSTRUCTION, A DETAIL DESCRIBING THE MEANS AND METHODS OF SUPPORTING THE HRSD INFRASTRUCTURE SHALL BE SUBMITTED TO HRSD FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
8. CONTRACTOR SHALL NOTE THAT SIX MONTHS AFTER COMPLETION OF CONSTRUCTION AND/OR FINAL SITE WORK, HRSD SHALL REINSPECT THE CROSSING LOCATION TO IDENTIFY POOR BACKFILL OR INSTALLATION. CONTRACTOR SHALL BE EXPECTED TO WARRANTY AND REPAIR ANY DISCREPANCIES NOTED.

SITE PREPARATION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS OF ALL EXISTING UTILITIES WITHIN THE PROJECT AREA PRIOR TO COMMENCEMENT OF CONSTRUCTION OPERATIONS.
2. ALL DOWNSTREAM EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND CONSTRUCTED PRIOR TO THE COMMENCEMENT OF ANY UPSTREAM EARTHWORK ACTIVITIES ON-SITE. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THESE PLANS AND THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION, 1992 AND THE CONSTRUCTION NOTES.
3. THE CONTRACTOR IS RESPONSIBLE FOR LAYOUT AND STAKE-OUT OF ALL WORK COVERED UNDER THESE PLANS.
4. ALL CONSTRUCTION AND DEMOLITION ACTIVITIES ASSOCIATED WITH THIS PROJECT SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT CONSTRUCTION AND/OR WASTE MATERIALS DO NOT ENTER AQUATIC RESOURCES.
5. ALL VEGETATION, WOODY, OR OTHERWISE, EXCEPT LAWN, ORNAMENTAL GRASS AND FLOWERS LESS THAN TWENTY-FOUR (24) INCHES IN HEIGHT WITHIN THE 100' CBPA BUFFER REQUIRES A PERMIT FOR REMOVAL, ALTERATION, OR WORK WITHIN THE CRITICAL ROOT ZONE FROM BUREAU OF ENVIRONMENTAL SERVICES (757-664-4751) WITH SUBSEQUENT MITIGATION REQUIREMENTS.

EARTHWORK

1. THE CONTRACTOR SHALL PERFORM ALL GRADING EARTHWORK OPERATIONS IN ACCORDANCE WITH THE FINAL GRADES INDICATED ON THE GRADING PLAN, THE CROSS SECTION, GENERAL DETAILS AND THE ASSOCIATED TECHNICAL SPECIFICATIONS.
2. FINAL GRADES SHALL BE WITHIN 0.1 FOOT OF THE PROPOSED FINAL GRADES SHOWN ON THE PLANS. ANY DEVIATIONS WITH FINAL FINE GRADES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND DESIGNER WITH 48 HOURS TO ADDRESS THE ISSUE.
3. NEWLY GRADED AREAS SHALL BE PROTECTED FROM CONSTRUCTION TRAFFIC, EROSION, AND SETTLEMENTS THAT MAY OCCUR. THE CONTRACTOR SHALL REPAIR AND REESTABLISH DAMAGED FINAL GRADED AREAS AT NO ADDITIONAL EXPENSE TO THE OWNER.
4. FINAL GRADES WILL INCLUDE 3" OF SUITABLE TOPSOIL CONTAINING 5% ORGANIC MATERIAL AT A MINIMUM PER THE DCR SPECIFICATION FOR SOIL.
5. THE ENGINEER OR LANDSCAPE ARCHITECT WILL CONDUCT A SITE INSPECTION AT THE COMPLETION OF FINE GRADING AND NOTIFY THE CONTRACTOR OF ACCEPTANCE PRIOR TO THE COMMENCEMENT OF SEEDBED PREPARATION AND SEEDING AND PLANTING OPERATIONS.
6. THE STORMWATER MANAGMENT/BMP FACILITY AND ASSOCIATED STORMWATER CONVEYANCE SYSTEMS AS PROPOSED FOR THIS PROJECT WILL REQUIRE SUBMISSION, REVIEW, AND APPROVAL OF A RECORD DRAWING (AS-BUILT) AND CONSTRUCTION CERTIFICATION PRIOR TO RELEASE OF THE CO. RECORD DRAWING AND CONSTRUCTION CERTIFICATION IS REQUIRED TO BE RECORDED AND CHECKED BY A LICENSE SURVEYOR.
7. PROPER SITE DRAINAGE SHALL BE MAINTAINED BY THE CONTRACTOR DURING ALL EARTHWORK OPERATIONS. SURFACE WATER THAT PROHIBITS EARTHWORK SHALL BE REMOVED OR MITIGATED BY THE CONTRACTOR.

EROSION AND SEDIMENT CONTROL NARRATIVE :

PROJECT DESCRIPTION:
THE PROPOSED PROJECT IS THE JEFF ROBERTSON PARK STORMWATER WETLAND. THE SUBJECT PROPERTY IS LOCATED AT THE WESTERN TERMINUS OF AZALEA COURT AND THE NORTHERN TERMINUS OF ARMISTEAD BRIDGE ROAD IN NORFOLK, VIRGINIA. THE PROPOSED AREA OF DISTURBANCE IS 1.71 ACRES. THE RETROFIT CONSISTS OF CONSTRUCTING A STORMWATER WETLAND, FILLING THE EXISTING POND, AND ADDING RIP RAP TO THE EXISTING SWALE ON THE SOUTH END OF THE PROPERTY.

DRAINAGE CONDITIONS:
THE EXISTING GRADE CHANGE ACROSS THE SITE IS FROM 10.3' ALONG THE NORTHERN SITE BOUNDARY TO 4.7' AT THE SOUTHERN SITE BOUNDARY. THE SITE PRIMARILY DRAINS SOUTH TO LAMBERT'S CREEK BY MEANS OF SHEET FLOW. SITE DRAINAGE WILL NOW BE A COMBINATION OF SHEET FLOW AND PIPE FLOW TO THE WETLAND BEFORE OUT FLOWING THROUGH A RISER STRUCTURE INTO LAMBERT'S CREEK.

ADJACENT AREAS:
EROSION AND SEDIMENT CONTROL MEASURES SUCH AS STONE CONSTRUCTION ENTRANCE, ROCK SILT CHECK DAM, AND PERMANENT SEEDING WILL BE USED TO MINIMIZE IMPACTS OF CONSTRUCTION ON ADJACENT PROPERTIES AND RECEIVING WATERS.

SOILS:
THE FOLLOWING SOILS ARE PRESENT ON-SITE ACCORDING TO A WEB SOIL SURVEY GENERATED FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) AND NATURAL RESOURCES CONSERVATION SERVICE (NRCS) ONLINE DATABASE:

SOIL TYPE 1, ALTAVISTA-URBAN LAND COMPLEX, 0 TO 3 PERCENT SLOPES: THE ALTAVISTA-URBAN LAND COMPLEX MAKES UP 65 PERCENT OF THE PROJECT AREA. THIS COMPONENT IS TYPICALLY FOUND ON MARINE TERRACES. THE PARENT MATERIAL CONSISTS OF LOAMY FLUVIOMARINE DEPOSITS. THE NATURAL DRAINAGE CLASS IS MODERATELY WELL DRAINED AND THE SOIL IS IN HYDROLOGIC SOIL GROUP C.

SOIL TYPE 2, AUGUSTA-URBAN LAND COMPLEX, 0 TO 2 PERCENT SLOPES: THE AUGUSTA-URBAN LAND COMPLEX MAKES UP 60 PERCENT OF THE PROJECT AREA. THIS COMPONENT IS TYPICALLY FOUND ON STREAM TERRACES. THE PARENT MATERIAL CONSISTS OF LOAMY FLUVIOMARINE DEPOSITS. THE NATURAL DRAINAGE CLASS IS SOMEWHAT POORLY DRAINED AND THE SOIL IS IN HYDROLOGIC SOIL GROUP D.

SOIL TYPE 12, JOHNSTON SILT LOAM, 0 TO 2 PERCENT SLOPES: THE JOHNSTON SILT LOAM MAKES UP 85 PERCENT OF THE PROJECT AREA. THIS COMPONENT IS TYPICALLY FOUND ON FLOOD PLAINS. THE NATURAL DRAINAGE CLASS IS VERY POORLY DRAINED AND THE SOIL IS IN HYDROLOGIC SOIL GROUP A.

SOIL TYPE 26, UDORTHENTS-DUMPS, THE UDORTHENTS-DUMPS COMPLEX MAKES UP 50 PERCENT OF THE PROJECT AREA. THIS COMPONENT IS TYPICALLY FOUND ON MARINE TERRACES. THE SOIL IS IN HYDROLOGIC SOIL GROUP D.

EROSION AND SEDIMENT CONTROL MEASURES:

ALL PROPOSED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. EROSION AND SEDIMENT CONTROL MEASURES ARE DISPLAYED ON SHEETS 210 AND 250. THE FOLLOWING EROSION AND SEDIMENT CONTROL MEASURES ARE INCLUDED IN THE SITE DESIGN:

CONSTRUCTION ENTRANCE:
A GRAVEL CONSTRUCTION ENTRANCE IS PROPOSED TO ENSURE REMOVAL OF SEDIMENT FROM CONSTRUCTION VEHICLES LEAVING THE SITE AT THE PROPOSED SITE ENTRANCE. THE PURPOSE OF THE CONSTRUCTION ENTRANCE IS TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE EXISTING SURFACE OF ADJACENT CITY STREETS.

INLET PROTECTION:
INLET PROTECTION WILL BE PROVIDED ON ALL EXISTING STORM DRAIN INLETS IN THE SITE VICINITY AND WITHIN THE LIMITS OF DISTURBANCE. THESE MEASURES WILL BE USED TO PREVENT SEDIMENT-LADEN RUNOFF FROM ENTERING THE STORM DRAINS.

TREE PROTECTION:
TREE PROTECTION WILL BE PROVIDED TO PROTECT THE TREE DRIP LINE AND ROOT ZONE FROM CONSTRUCTION ACTIVITIES.

SILT FENCE:
SILT FENCE WILL BE PROVIDED TO PREVENT SEDIMENT FROM LEAVING LAYDOWN/STOCKPILE AREA(S).

SEQUENCE OF CONSTRUCTION

1. THE CONTRACTOR SHALL CALL MISS UTILITY 72 HOURS PRIOR TO ANY EXCAVATION WORK.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST REVISION, AND CITY ORDINANCES.
 - THE CONTRACTOR SHALL ENSURE THAT THE EXISTING POND, SWALES, AND CONNECTING PIPES REMAIN FUNCTIONAL UNTIL INSTALLATION OF STORMWATER IMPROVEMENTS ARE COMPLETE
 - THE TEMPORARY CONSTRUCTION ENTRANCE MAY REQUIRE PARTIAL FILLING OF THE EXISTING POND. CONTRACTOR SHALL ENSURE THAT ALL POND INLETS AND OUTFALLS REMAIN FUNCTIONAL.
 - ROADWAY AND WALKWAY ACCESS TO THE PARK SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL STABILIZE DUE TO THE NATURE OF THIS PROJECT AND RELATIVELY SHORT CONSTRUCTION PERIOD, EROSION AND SEDIMENT CONTROL SHALL BE HANDLED IN THE FOLLOWING MANNER:
 - ALL GRADING WORK SHALL COMMENCE FROM UPSTREAM TO DOWNSTREAM, AVOIDING THE CHANCE OF AN UNSTABILIZED SECTION CARRYING FLOW AND THEREFORE MOVING SEDIMENT.
 - THE CONTRACTOR SHALL STABILIZE THE SWALES WITH COIR FIBER MATTING AS SHOWN ON SHEET 7. BEFORE COIR FIBER MATTING HAS BEEN PLACED, THE TEMPORARY OR PERMANENT SEED MIX SHALL BE INCORPORATED WITH THE NEWLY GRADED SUBSTRATE.
4. HAND CLEARING OPERATIONS SHALL PROCEED AS NECESSARY TO FACILITATE EARTHWORK ACTIVITIES. ONLY AREAS NECESSARY TO THE COMPLETION OF THE PROJECT SHALL BE CLEARED. ALL EXISTING WOODY VEGETATION SCHEDULED TO REMAIN SHALL BE LEFT UNDISTURBED.
5. GRADING OPERATIONS SHALL COMMENCE AND BE COMPLETED AS SPECIFIED ON THE GRADING PLANS & DETAILS.
6. SEEDING OPERATIONS SHALL COMMENCE AND BE COMPLETED AS SPECIFIED ON THE PLANTING PLANS & DETAILS.
7. SEEDED AREAS SHALL BE INSPECTED BY THE PROJECT DESIGNER AT THE COMPLETION OF THE SEEDING OPERATIONS AND ACCEPTED SUBJECT TO COMPLIANCE WITH MATERIALS AND INSTALLATION REQUIREMENTS.
8. PLANTING OF TREES, SHRUBS, AND HERBACEOUS PLUGS SHALL COMMENCE AND BE COMPLETED AS SPECIFIED ON THE PLANTING PLANS AND DETAILS.
9. THE PROJECT DESIGNER SHALL PERFORM A FINAL SITE INSPECTION. ALL COMMENTS RECEIVED BY THE CONTRACTOR SHALL BE ADDRESSED PRIOR TO THE COMMENCEMENT OF CLEAN-UP ACTIVITIES.
10. THE CONTRACTOR SHALL COMMENCE WITH THE FINAL CLEAN-UP OF THE PROJECT SITE.

CITY OF NORFOLK STANDARD EROSION & SEDIMENT CONTROL NOTES

1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (3RD EDITION, 1992) AND THE CITY OF NORFOLK EROSION AND SEDIMENT CONTROL ORDINANCE.
2. THE CONTRACTOR SHALL CONTACT THE CITY OF NORFOLK, BUREAU OF ENVIRONMENTAL SERVICES (664-4368) AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY (INCLUDING DEMOLITION) SO THAT A PRE-CONSTRUCTION CONFERENCE CAN BE SCHEDULED.
3. THE CONTRACTOR SHALL APPLY PERMANENT OR TEMPORARY SOIL STABILIZATION TO ALL DENUDED OR DISTURBED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. SOIL STABILIZATION MUST ALSO BE APPLIED TO DENUDED OR DISTURBED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WHICH WILL REMAIN UNDISTURBED FOR LONGER THAN 14 DAYS. SOIL STABILIZATION MEASURES INCLUDE VEGETATIVE ESTABLISHMENT, MULCHING AND THE EARLY APPLICATION OF GRAVEL BASE MATERIAL ON AREAS TO BE PAVED.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION.
5. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND CLEANUP OF SEDIMENTATION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MADE IMMEDIATELY.
6. THE CONTRACTOR SHALL LIMIT SITE ACCESS BY CONSTRUCTION VEHICLES TO ENTRANCES PROTECTED BY A STONE CONSTRUCTION ENTRANCE (VESCH STD. & SPEC. 3.02) OR AN APPROVED COMPARABLE CONTROL MEASURE. SEDIMENT SHALL BE REMOVED FROM PAVED AREAS ON A DAILY BASIS.
7. STOCK PILES OF SOIL AND OTHER ERODIBLE MATERIALS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION FOR STOCKPILES ON SITE AS WELL AS FOR MATERIALS TRANSPORTED FROM THE PROJECT SITE.
8. THE CONTRACTOR SHALL MONITOR AND TAKE PRECAUTIONS TO CONTROL DUST INCLUDING (BUT NOT LIMITED TO) USE OF WATER, MULCH, OR CHEMICAL DUST ADHESIVES AND CONTROL OF CONSTRUCTION SITE TRAFFIC.
9. EFFLUENT FROM DE-WATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT ADJACENT PROPERTIES, WETLANDS, WATERWAYS OR THE STORM DRAINAGE SYSTEM.
10. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY.
11. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. AFTER STABILIZATION IS COMPLETE, ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS. TRAPPED SEDIMENT SHALL BE SPREAD AND SEEDED.

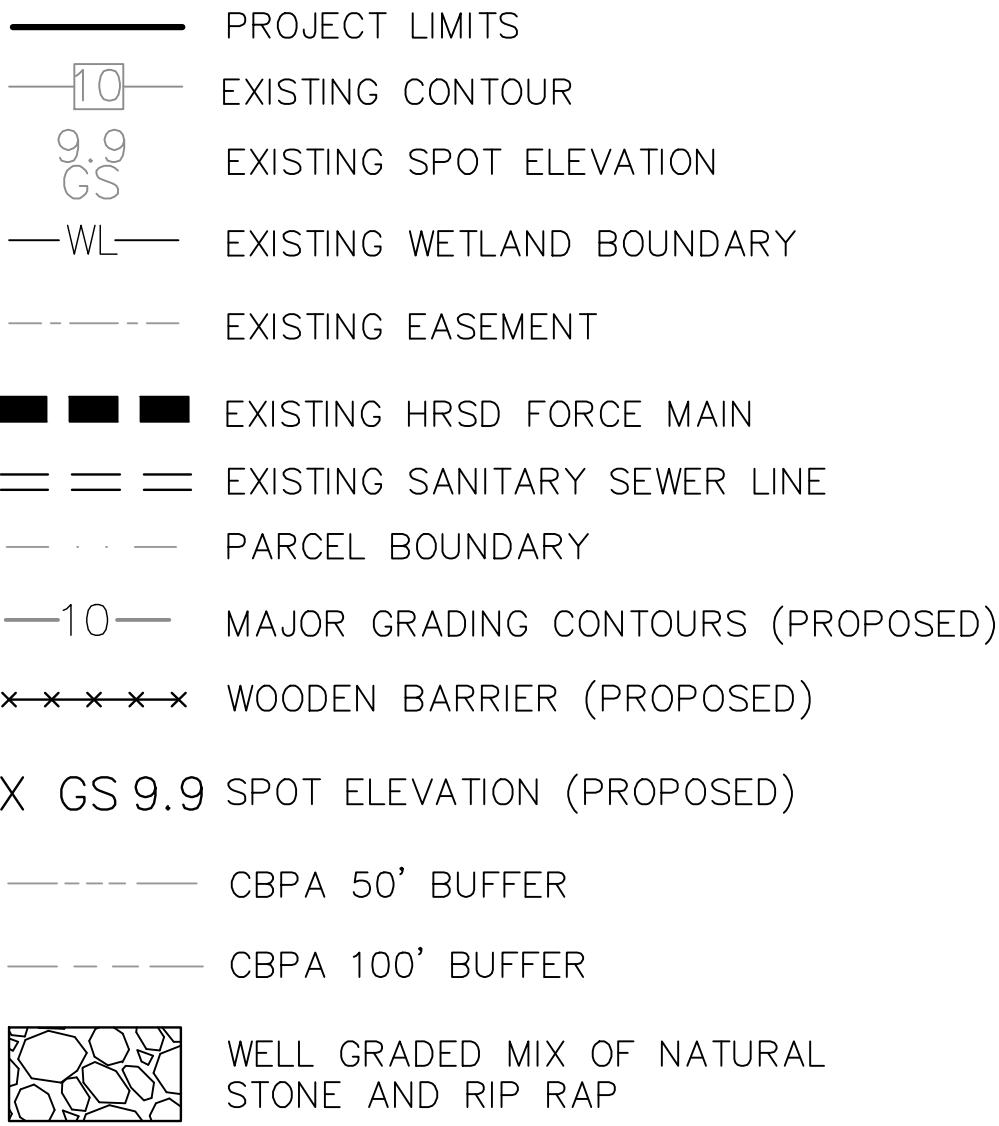
PLANTING SEQUENCING

1. HOLES FOR INDIVIDUAL PLANTINGS SHALL BE EXCAVATED TO PRODUCE VERTICAL SIDES AND FLAT BOTTOMS. ALL PLANTING HOLES SHALL HAVE ROUGHED, SCARIFIED SIDES AND BOTTOMS.
2. APPLY ONE (1) TEN GRAM AGRIFORM FOREST STARTER 22-8-2 TIME RELEASE TABLET OR EQUIVALENT PRODUCT TO EACH TREE AND SHRUB AS PER MANUFACTURER'S DIRECTIONS ON LABEL AT TIME OF PLANTING. OTHER FERTILIZATION METHODS MAY BE USED IF APPROVED BY THE DESIGNER OR OWNER PRIOR TO PLANTING.
3. CONTAINERIZED PLANTS SHALL BE SET IN THE PLANTING PIT AT THE PROPER DEPTH ON TAMPED SOIL. SOIL REMOVED FROM THE PLANTING PIT AND AMENDED AS PER SPECIFICATIONS SHALL THEN BE FILLED AROUND THE ROOTS AND TAMPED.
4. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS TO INDICATED FINAL GRADES IF DISTURBED BY THE INSTALLATION OF SHRUBS AND TREES.

PLANTING GENERAL NOTES

1. THE PLANTING WINDOW FOR THE LISTED WOODY VEGETATION SHALL BE BETWEEN NOVEMBER 15 AND MARCH 15 AS LONG AS THE SOIL IS NOT FROZEN. SEEDING OPERATIONS SHALL IMMEDIATELY FOLLOW ELEVATION ACCEPTANCE BY PROJECT DESIGNER. THE CONTRACTOR SHALL NOT PERFORM SEEDING APPLICATION WHEN SOIL IS FROZEN.
2. ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST AT ALL TIMES AND BE PROVIDED WITH SHADE DURING TRANSPORT TO THE JOB SITE, AND UNTIL PLANTINGS ARE COMPLETED.
3. STABILIZE ALL DISTURBED AREAS.
4. A ONE (1) YEAR WARRANTY, FROM DATE OF ACCEPTANCE OF INITIAL PLANTINGS, IS REQUIRED ON A MINIMUM OF 80% SURVIVAL OF PLANTED MATERIAL WITHIN THE PROJECT LIMITS.
5. REPLACEMENT OF ANY DEAD OR DAMAGED PLANT MATERIAL SHALL TAKE PLACE DURING THE FOLLOWING PLANTING WINDOW AFTER THE COMPLETION OF ONE COMPLETE GROWING SEASON.
6. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR PLANT MATERIAL DAMAGED BY FIRE, VANDALISM, OR OTHER ACTIVITIES BEYOND THE CONTRACTOR'S CONTROL.
7. THE PLANT CONTRACTOR SHALL NOT SUBSTITUTE ANY PLANT MATERIAL WITHOUT PRIOR APPROVAL FROM PROJECT DESIGNER.
8. PLANTED AREAS SHALL BE INSPECTED BY THE PROJECT DESIGNER AT THE COMPLETION OF THE PLANTING OPERATIONS
9. INSTALL PLANT MATERIALS AT THE SPECIFIED DENSITY RATES AND IN LOCATIONS SHOWN ON THE PLANTING PLAN.
10. PLANT MATERIALS SHALL BE INSTALLED IN A NON-UNIFORM, RANDOM PATTERN, SO PLANTS DO NOT APPEAR TO BE PLANTED IN STRAIGHT LINES.
11. SPECIES SHOULD BE DISTRIBUTED EVENLY THROUGHOUT PLANTING AREA TO THE GREATEST EXTENT POSSIBLE.
12. ALL PLANT MATERIALS SHALL BE SUPPLIED BY SOURCES WITHIN THE SAME HARDINESS ZONE OF THE PROJECT (WITHIN A 200 MILE RADIUS OF THE PROJECT SITE IF POSSIBLE).
13. THE CONTRACTOR SHALL MAINTAIN INSTALLED TREES, SHRUBS, AND HERBACEOUS PLUGS WITHIN THE PROJECT LIMITS UNTIL FINAL ACCEPTANCE OF THE PROJECT BY THE ENGINEER.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF ALL WORK COVERED UNDER THESE PLANS.
15. ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE UNIFORMLY BRANCHED AND HAVE A VIGOROUS ROOT SYSTEM. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE FROM DEFECTS, DECAY, DISEASES, INSECT PEST EGGS, AND ALL FORMS OF INFESTATION. ALL PLANT MATERIAL SHALL BE FRESH, FREE FROM TRANSPLANT SHOCK OR VISIBLE WILT. PLANTS DEEMED UNHEALTHY WILL BE REJECTED.
16. ALL PLANT MATERIAL SHALL MEET THE MINIMUM SPECIFICATIONS AND STANDARDS DESCRIBED IN THE CURRENT ISSUE OF 'THE AMERICAN STANDARD FOR NURSERY STOCK', PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSEYMEN, 1250 I STREET, N.W., SUITE 500, WASHINGTON, D.C. 20005.
17. ALL CONTAINER STOCK SHALL HAVE BEEN PROPAGATED IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL. CONTAINER STOCK WITH POORLY DEVELOPED ROOT SYSTEM WILL NOT BE ACCEPTED.
18. PLANTS WILL BE PREPARED FOR SHIPMENT IN A MANNER THAT WILL NOT CAUSE DAMAGE TO THE BARK, BUDS, BRANCHES, STEMS, OR OVERALL SHAPE OF THE STOCK. CONTAINER GROWN PLANTS WILL BE TRANSPORTED IN THE CONTAINERS IN WHICH THEY HAVE BEEN GROWN.
19. PLANTS NOT INSTALLED ON THE DAY OF ARRIVAL ON SITE SHALL BE STORED AND PROTECTED BY THE CONTRACTOR. OUTSIDE STORAGE AREAS WILL BE SHADED AND PROTECTED FROM THE WIND AND SUN. PLANTS STORED ON SITE SHALL BE PROTECTED FROM ANY DRYING AT ALL TIMES BY COVERING THE ROOT BALLS OR BARE ROOTS WITH MOIST SANDUST, WET BURLAP, WOOD CHIPS, SHREDDED BARK, PEAT MOSS, OR OTHER SIMILAR MULCHING MATERIAL.

LEGEND

- 
- PROJECT LIMITS

EXISTING CONTOUR

EXISTING SPOT ELEVATION

EXISTING WETLAND BOUNDARY

EXISTING EASEMENT

EXISTING HRSD FORCE MAIN

EXISTING SANITARY SEWER LINE

PARCEL BOUNDARY

MAJOR GRADING CONTOURS (PROPOSED)

WOODEN BARRIER (PROPOSED)

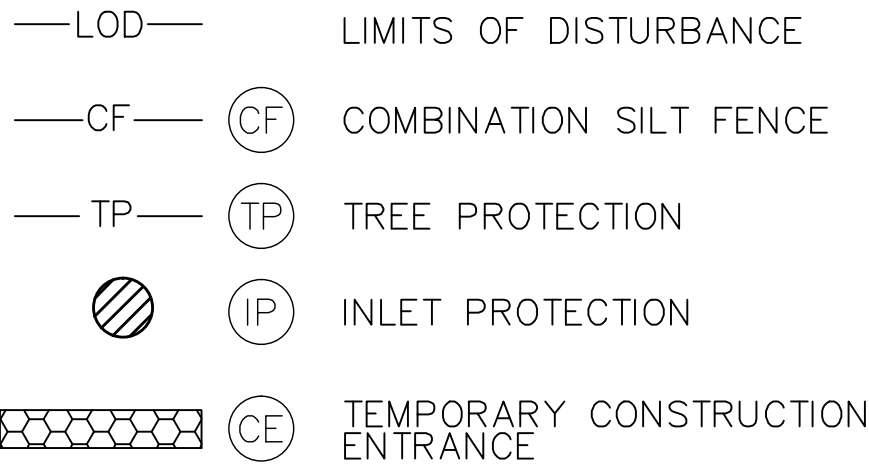
GS 9.9 SPOT ELEVATION (PROPOSED)

CBPA 50' BUFFER

CBPA 100' BUFFER

WELL GRADED MIX OF NATURAL STONE AND RIP RAP

EROSION AND SEDIMENT CONTROL

- 
- LIMITS OF DISTURBANCE

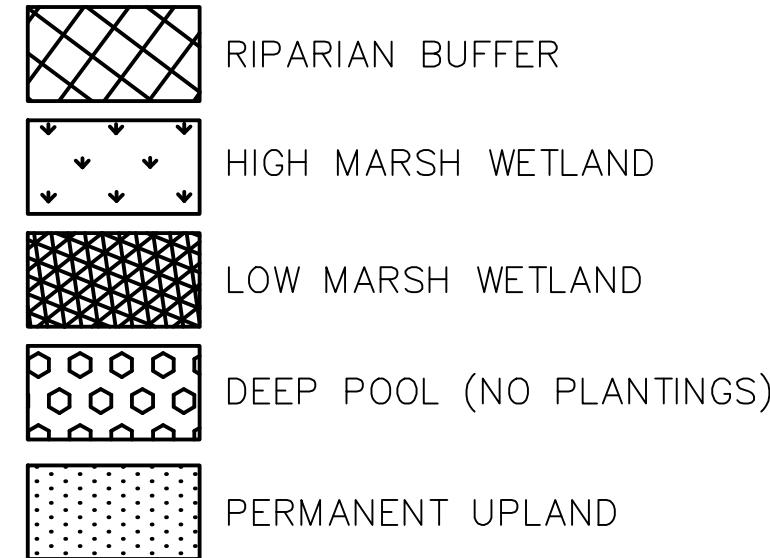
COMBINATION SILT FENCE

TREE PROTECTION

INLET PROTECTION

TEMPORARY CONSTRUCTION ENTRANCE

PLANTING ZONES

- 
- RIPARIAN BUFFER


HIGH MARSH WETLAND

LOW MARSH WETLAND

DEEP POOL (NO PLANTINGS)

PERMANENT UPLAND

No.	REVISIONS	DATE	BY



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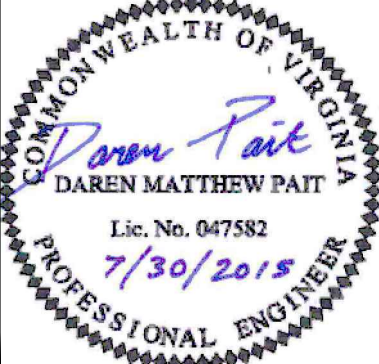
KHA PROJECT	116057057
DATE	JULY 31, 2015
SCALE	AS SHOWN
DESIGNED BY	RAW
DRAWN BY	KCK
CHECKED BY	DMP

JEFF ROBERTSON PARK STORMWATER WETLAND SITE PLAN #15-0014

PREPARED FOR

CITY OF NORFOLK

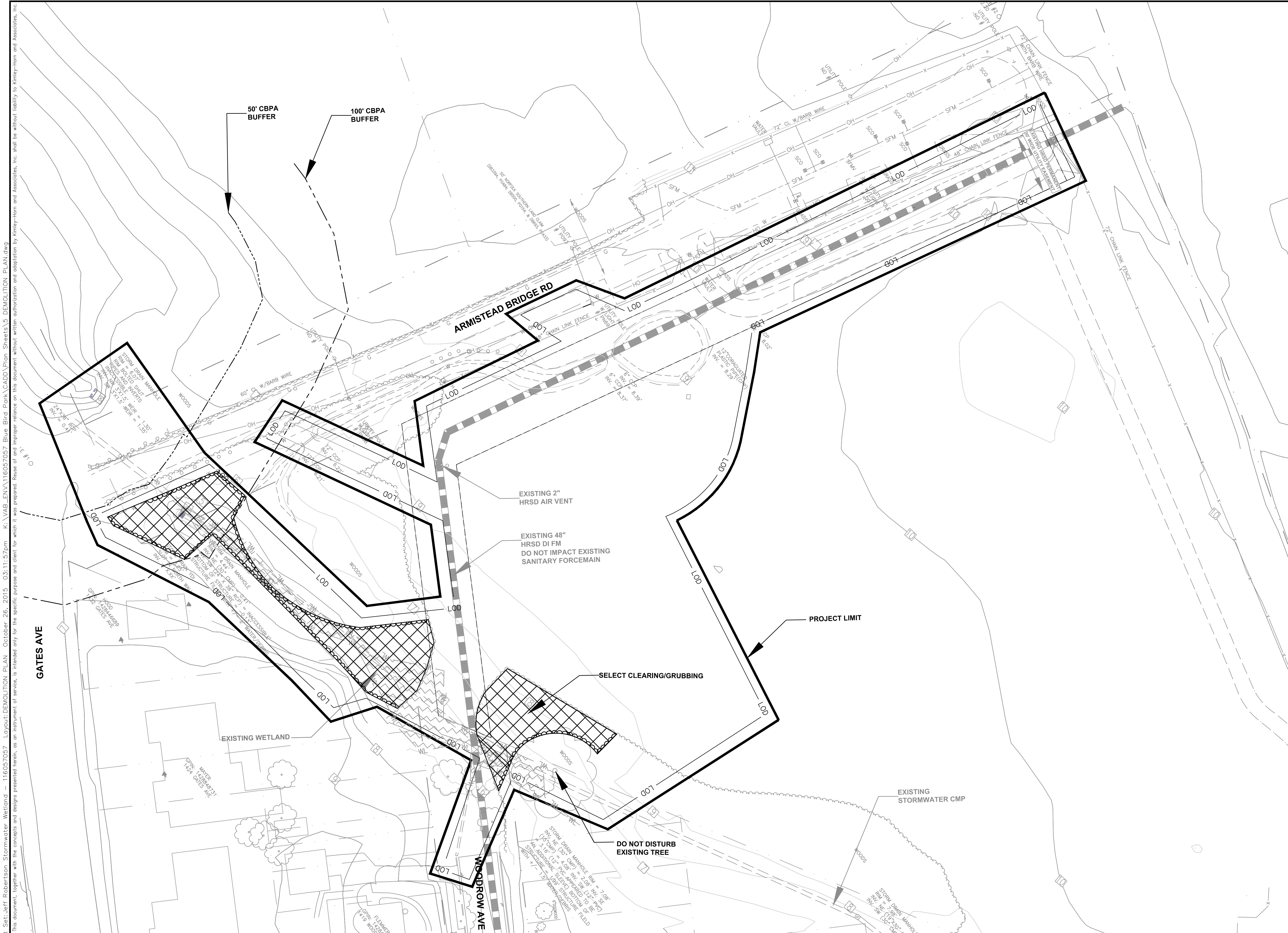
VA



GENERAL NOTES AND SYMBOLOLOGY

SHEET NUMBER

2



LEGEND

- PROJECT LIMITS
- LOD LIMITS OF DISTURBANCE
- EXISTING CONTOUR
- EXISTING WETLAND
- EXISTING HRSD DI FM
- EXISTING STORMWATER CMP
- PARCEL BOUNDARY
- EXISTING EASEMENT
- SELECT CLEARING/GRUBBING
- CBPA 50' BUFFER
- CBPA 100' BUFFER

GENERAL NOTES

- THIS DEMOLITION PLAN IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION.
- ALL DISTURBED AREAS SHALL BE STABILIZED.
- SEE PLANTING PLAN AND NOTES, SHEETS 14 AND 15, FOR TEMPORARY AND PERMANENT SEEDING SCHEDULES.

TREE NOTES

- ALL VEGETATION, WOODY, OR OTHERWISE, EXCEPT LAWN, ORNAMENTAL GRASS AND FLOWERS LESS THAN TWENTY-FOUR (24) INCHES IN HEIGHT WITHIN THE 100' CBPA BUFFER REQUIRE A PERMIT FOR REMOVAL, ALTERATION, OR WORK WITHIN THE CRITICAL ROOT ZONE FROM BUREAU OF ENVIRONMENTAL SERVICES (757-664-4751) WITH SUBSEQUENT MITIGATION REQUIREMENTS.
- ALL WORK MUST BE PERFORMED BY AN INTERNATIONAL SOCIETY OF ARBORICULTURE CERTIFIED ARBORIST.

811 Know what's below. Call before you dig.

0 30' 60'

GRAPHIC SCALE

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KHA PROJECT 116057057

DATE JULY 31, 2015

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DRAWN BY KCK

CHECKED BY DMP

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PREPARED FOR CITY OF NORFOLK

NORFOLK VA

COMMONWEALTH OF VIRGINIA

Daren Paik

DAREN MATTHEW PAIK

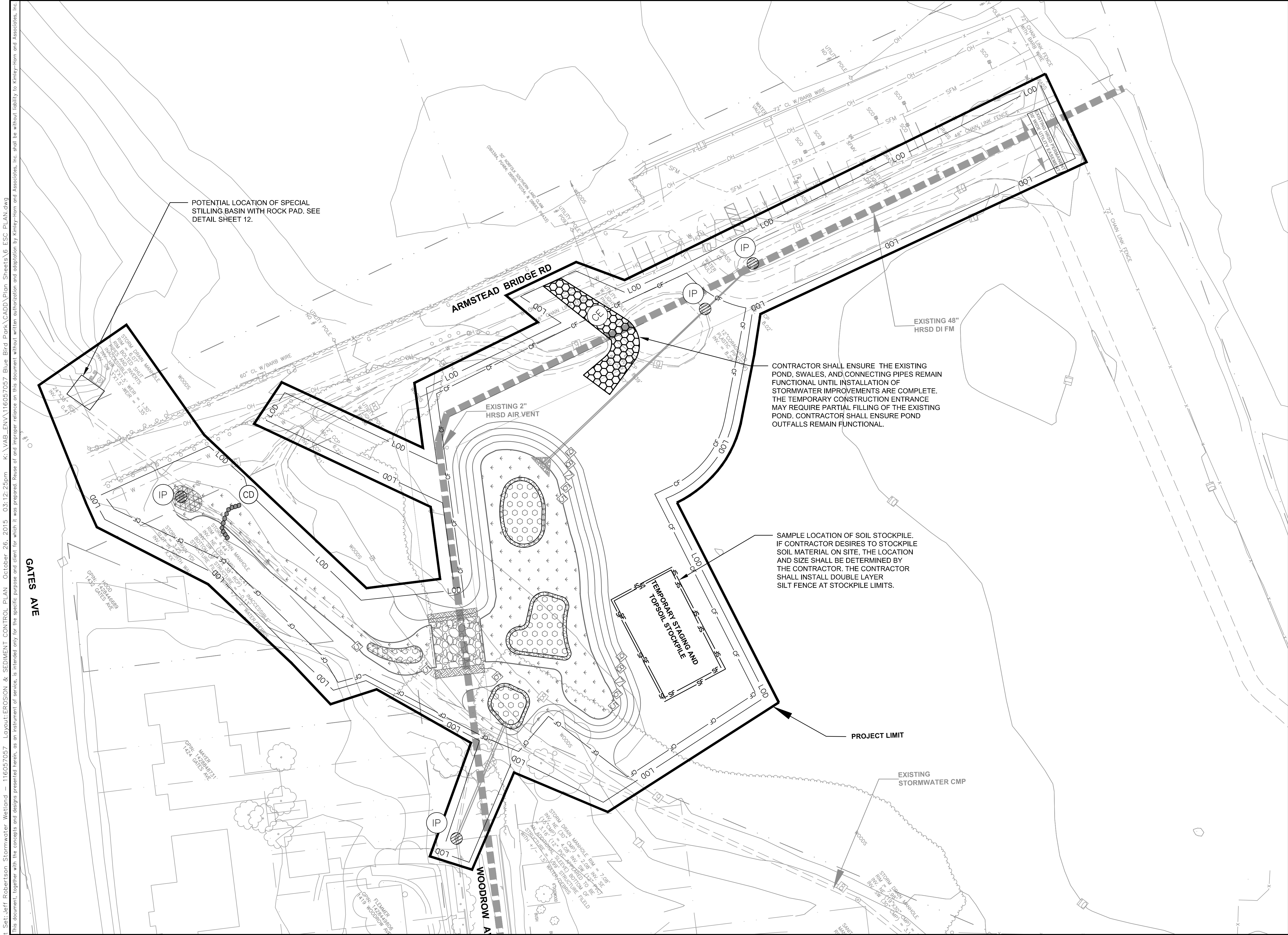
Lic. No. 047582

7/30/2015

PROFESSIONAL ENGINEER

DEMOLITION PLAN

SHEET NUMBER 5



PLANTING PLAN LEGEND

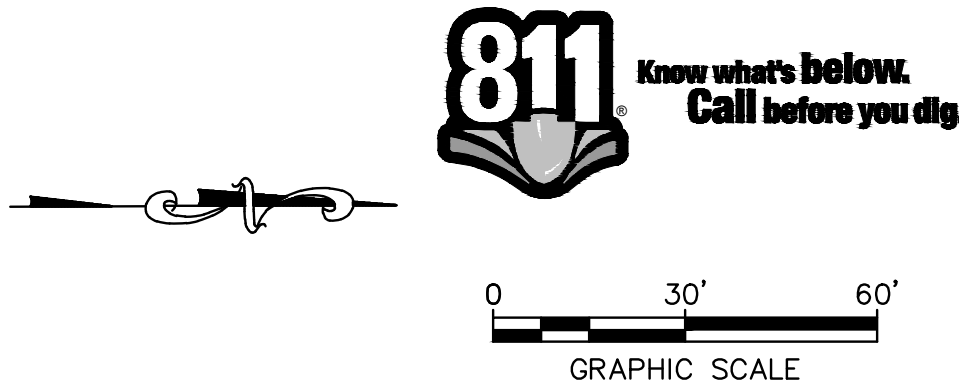
- HIGH MARSH WETLAND
- LOW MARSH WETLAND
- DEEP POOL

LEGEND

- PROJECT LIMIT
- LIMITS OF DISTURBANCE
- COMBINATION SILT FENCE
- SILT FENCE
- INLET PROTECTION
- ROCK SILT CHECK DAM
- TEMPORARY CONSTRUCTION ENTRANCE
- COIR FIBER MATTING

GENERAL NOTES

- PLNATING ZONES ARE SHOWN ON THIS SHEET FOR INFORMATIONAL PURPOSES ONLY. ACTUAL PLANTING PLANS AND ASSOCIATED NOTES AND DETAILS CAN BE FOUND ON SHEETS 14-16.
- ALL DISTURBED AREAS SHALL BE STABILIZED.



Plotted By: K. Kevin, Sheet Set: Jeff Robertson Stormwater Wetland - 116057057, Layout: EROSION & SEDIMENT CONTROL PLAN, October 26, 2015, 03:12:25pm, K:\VAB-ENV\116057057 Blue Bird Park\CAAD\Plan Sheets\6.ESC PLAN.dwg, This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of or improper reliance on this document without written authorization and approval by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

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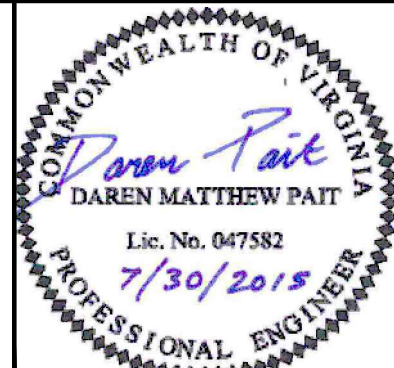
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KHA PROJECT
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DATE
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SCALE AS SHOWN
DESIGNED BY RAW
DRAWN BY KCK
CHECKED BY DMP

JEFF ROBERTSON PARK STORMWATER
WETLAND SITE PLAN #15-0014
PREPARED FOR
CITY OF NORFOLK

NORFOLK

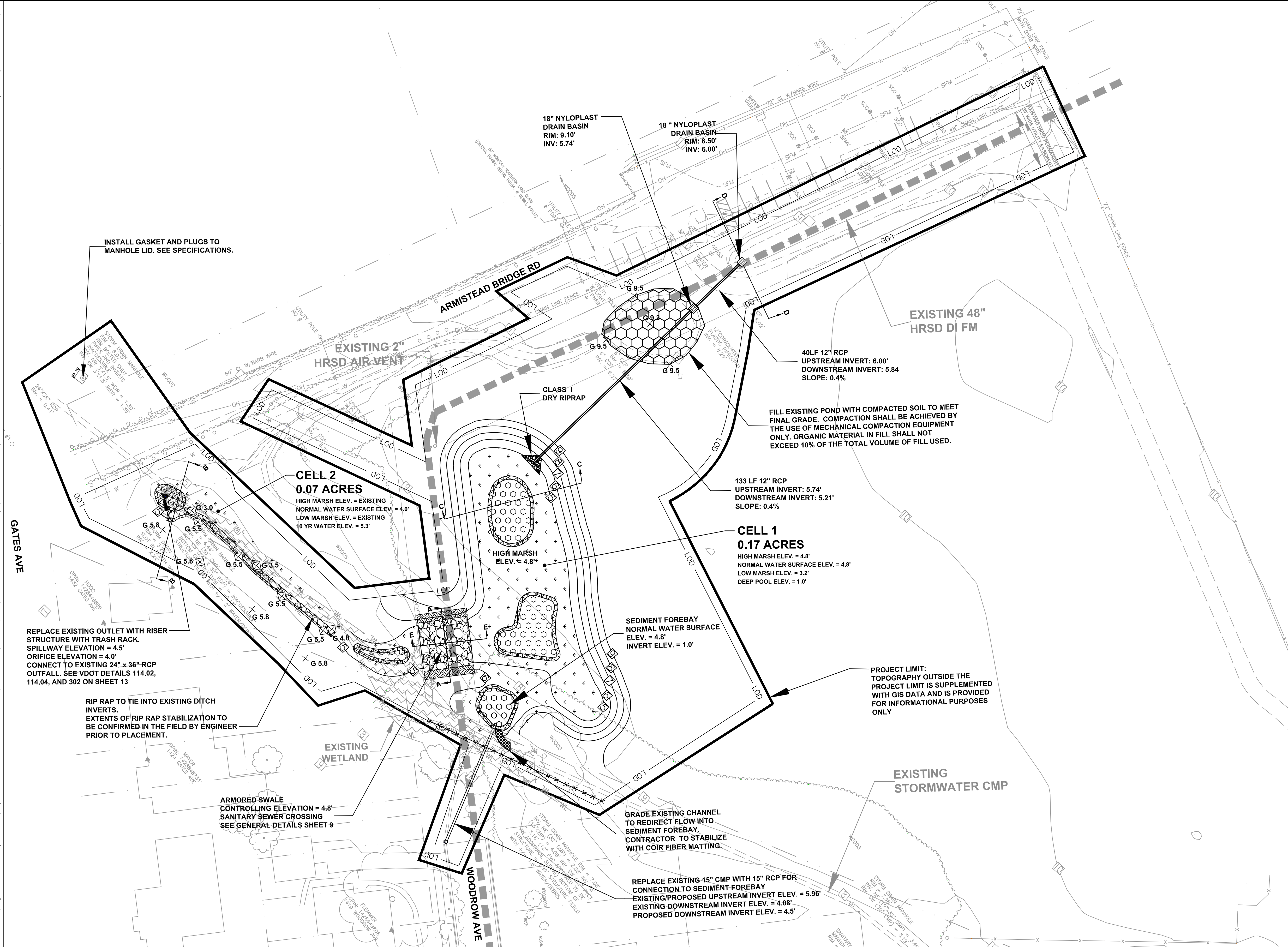


EROSION & SEDIMENT CONTROL
PLAN

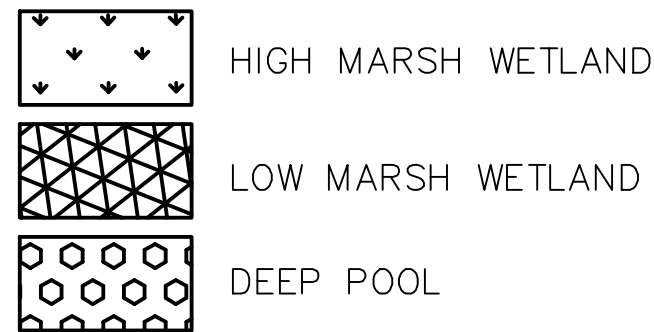
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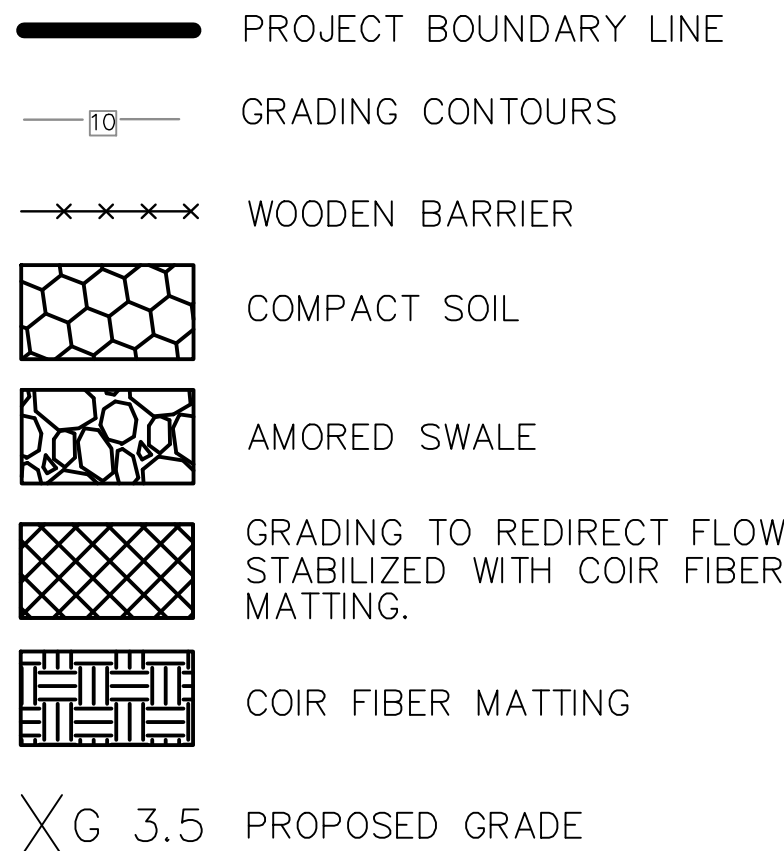
Plotted By: kconf, Kevin Sheet Set: Jeff Robertson Stormwater Wetland - 116057057 Layout: GRADING PLAN October 26, 2015 03:12:53pm K:\VAB_ENV\116057057 Blue Bird Park\CADD\Plan Sheets\7 GRADING PLAN.dwg
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PLANTING PLAN LEGEND



LEGEND

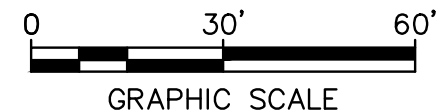


GENERAL NOTES

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2. ALL DISTURBED AREAS SHALL BE STABILIZED.

FLOOD RISK

FLOOD ELEVATIONS WITHIN THE PROJECT SITE CAN POTENTIALLY REACH ELEVATION 7.6' (NAVD88) DURING A 100-YEAR STORM EVENT AND CAN REACH APPROXIMATELY ELEVATION 5.75' (NAVD88) IN CELL 2 DURING A 10-YEAR STORM EVENT.



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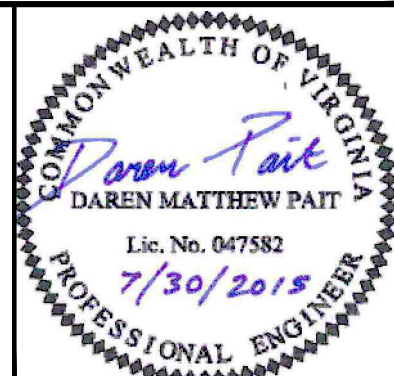
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KHA PROJECT
116057057
DATE
OCT. 20, 2015
SCALE AS SHOWN
DESIGNED BY RAW
DRAWN BY KCK
CHECKED BY DMP

JEFF ROBERTSON PARK STORMWATER
WETLAND SITE PLAN #15-0014
PREPARED FOR
CITY OF NORFOLK

NORFOLK

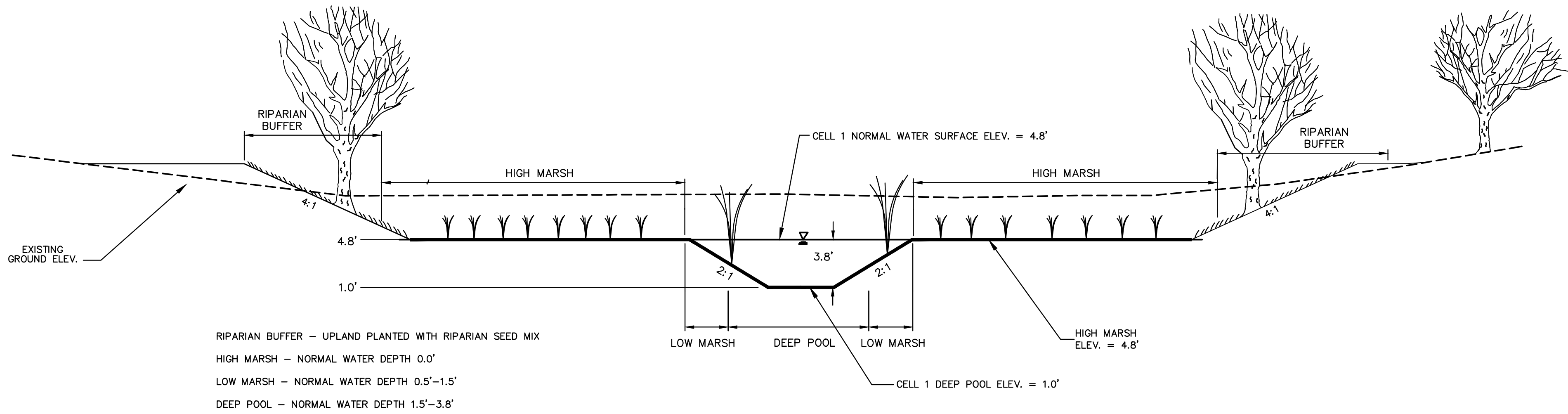


GRADING PLAN

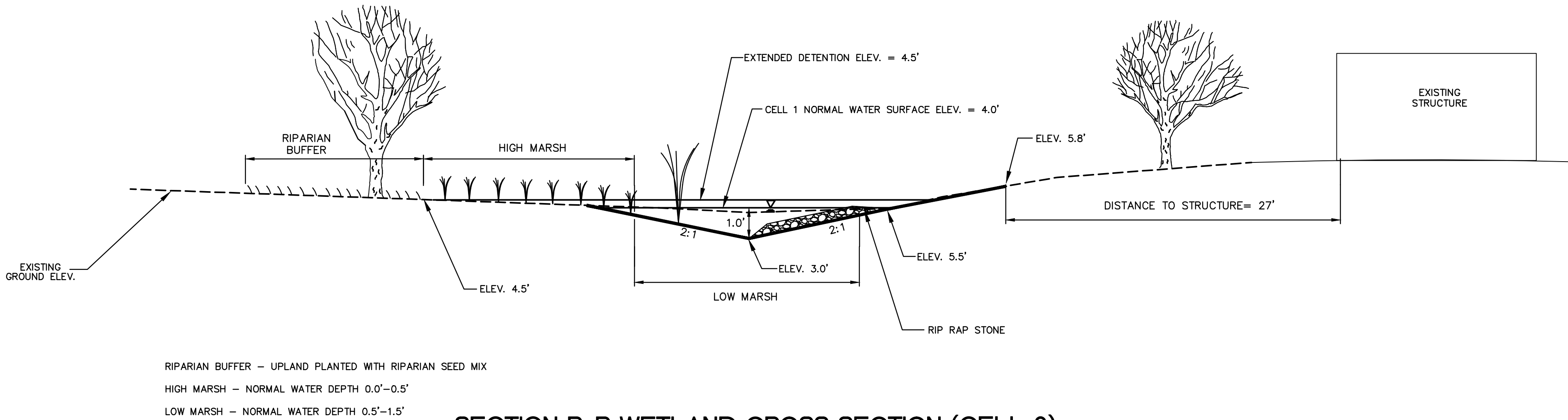
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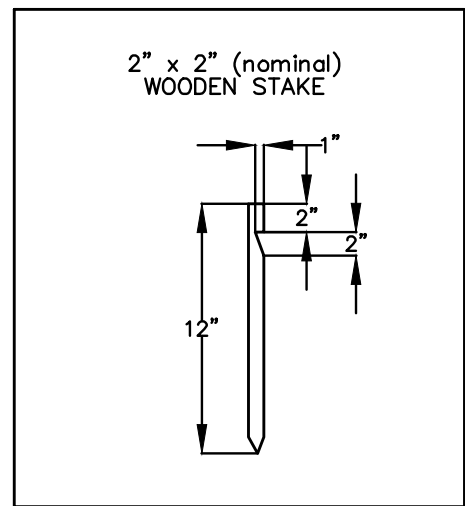
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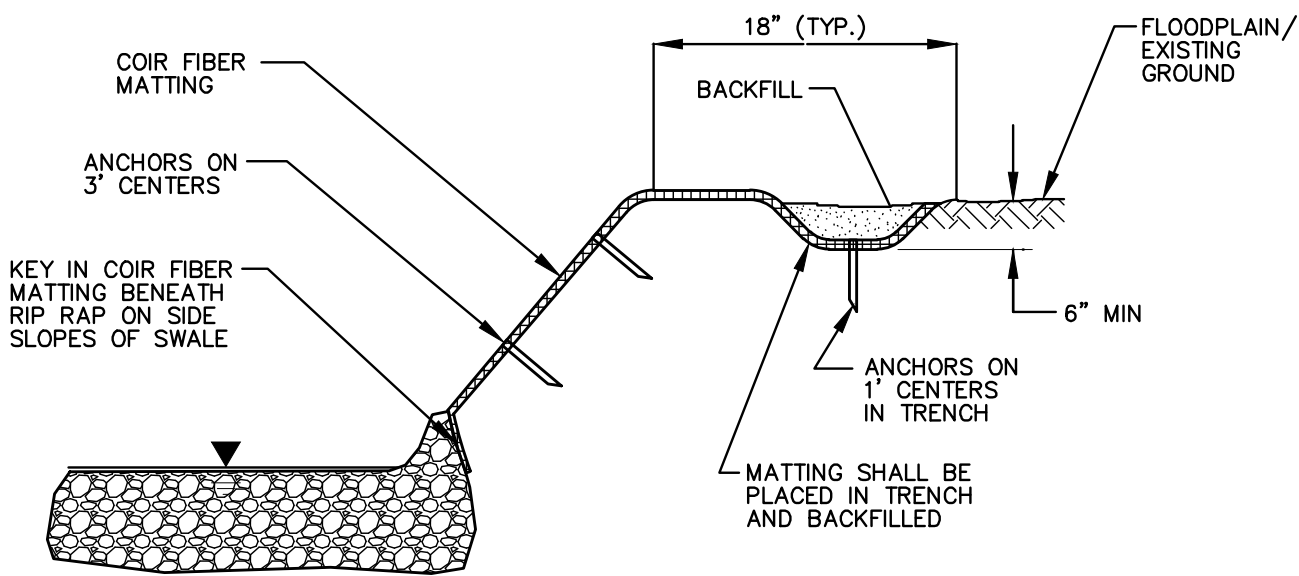
SECTION C-C WETLAND CROSS SECTION (CELL 1)
NOT TO SCALE



SECTION B-B WETLAND CROSS SECTION (CELL 2)
NOT TO SCALE

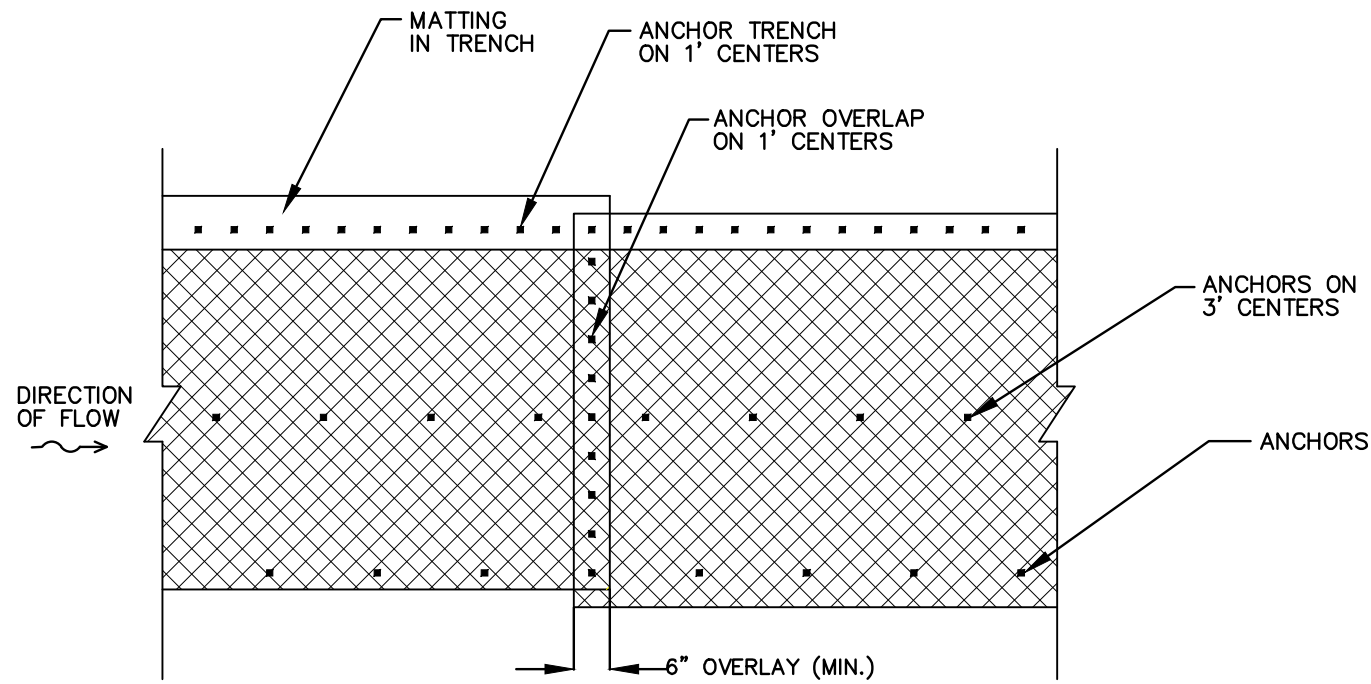


ANCHOR DETAIL



TYPICAL CROSS SECTION

COIR FIBER MATTING DETAIL
NOT TO SCALE



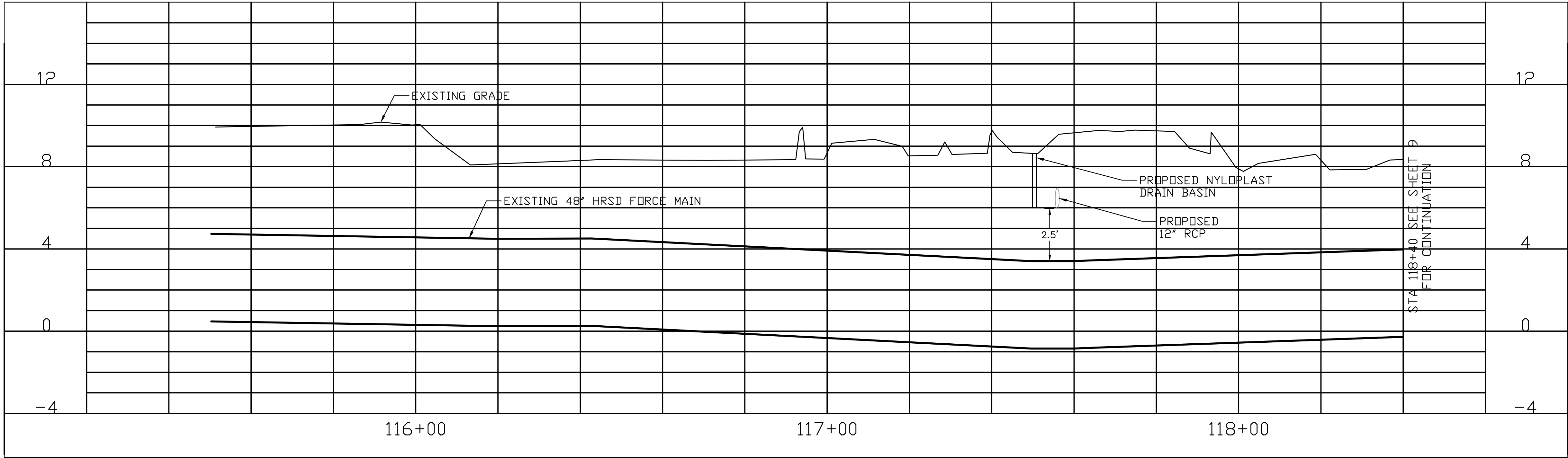
PLAN VIEW

- NOTES:
- IN AREAS TO BE MATTED, ALL SEEDING, SOIL AMENDMENTS, AND SOIL PREPARATION MUST BE COMPLETED IN ACCORDANCE WITH PROJECT SPECIFICATIONS PRIOR TO PLACEMENT OF COIR FIBER MATTING.
 - CORNSTARCH BASED STAKES MAY BE USED IN PLACE WOOD STAKES IF APPROVED BY THE OWNER AND DESIGNER PRIOR TO INSTALLATION.

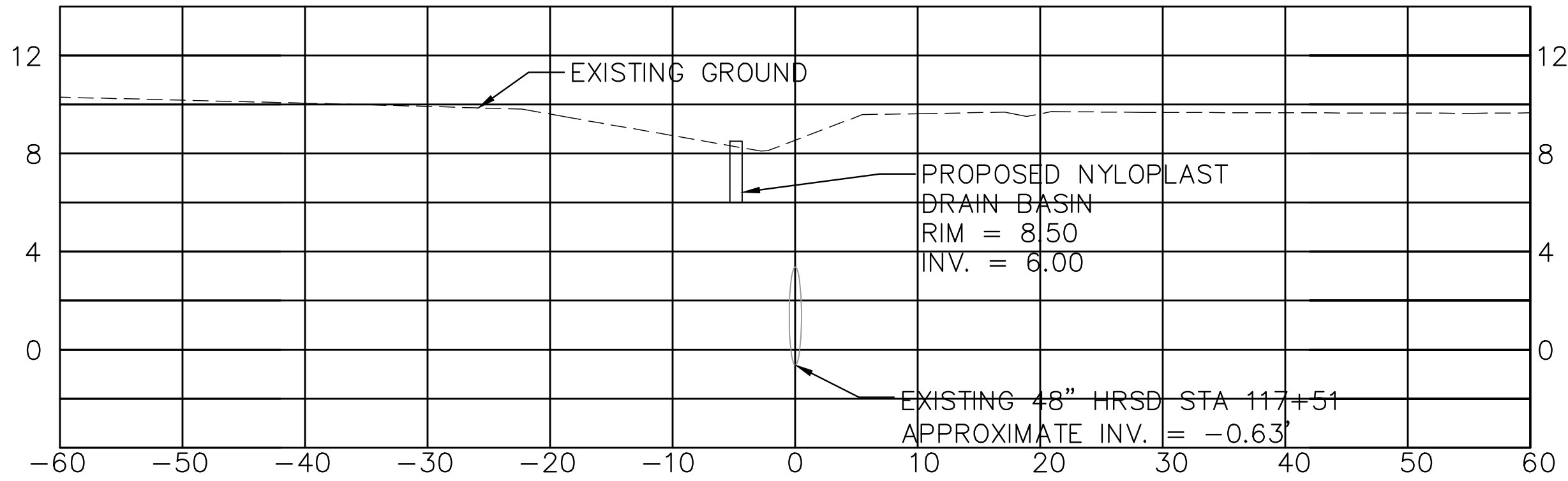
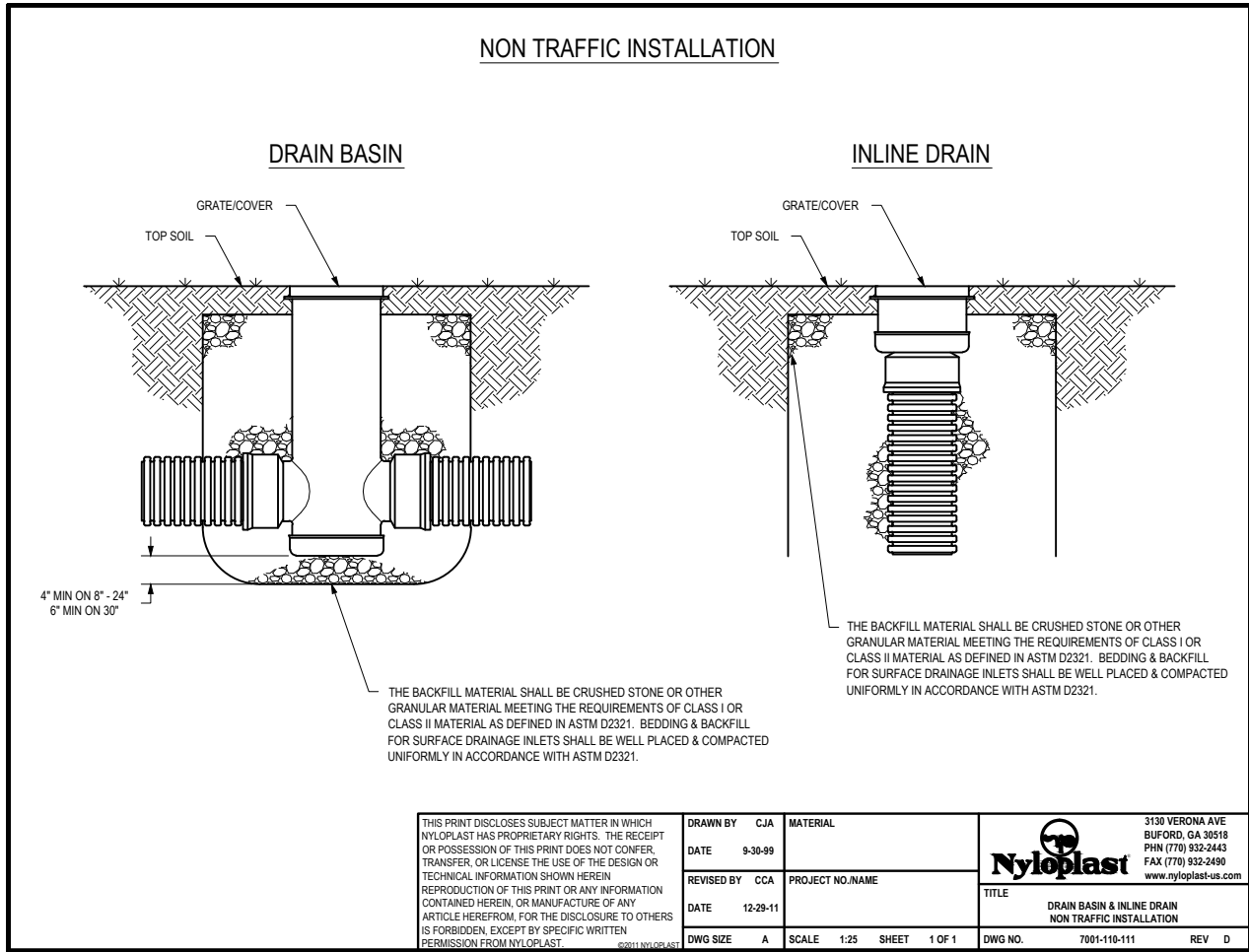
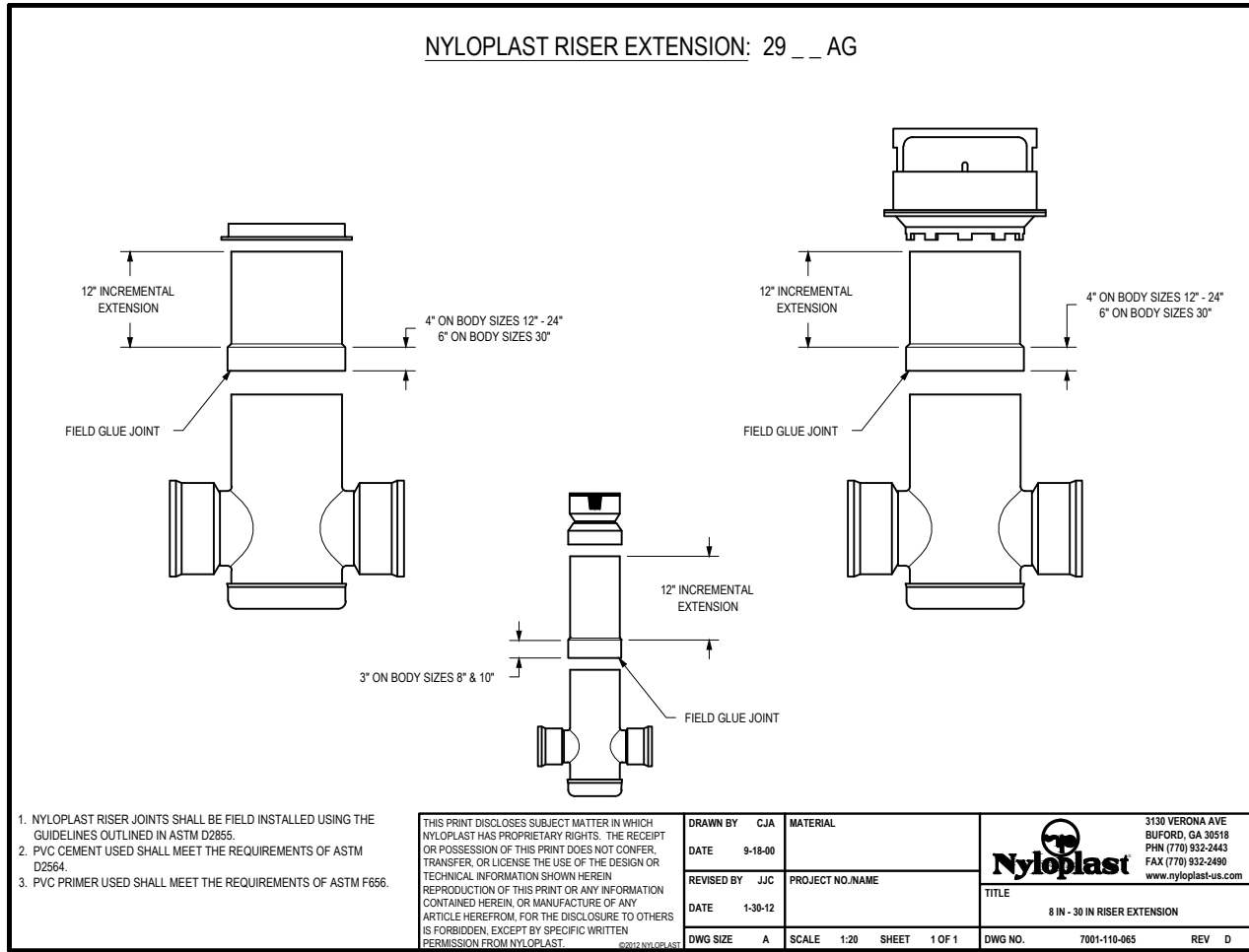
No.	REVISIONS	DATE	BY

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Plotted By: kcapf, Kevin Sheet Set: Jeff Robertson Stormwater Wetland - 116057057 Layout: 10 - GENERAL DETAILS October 26, 2015 03:13:30pm K:\VAB-ENV\116057057 Blue_Bird_Park\CADD\Plan_Sheets\8.9.10.11.12.13.14 DETAIL SHEETS.dwg
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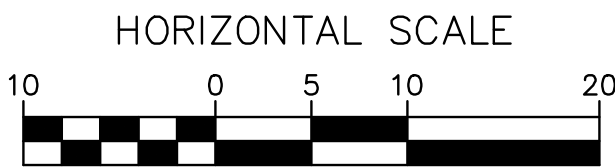
EXISTING 48" HRSD DI FM



RELOCATED 12" RCP PROFILE D-D



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KHA PROJECT
116057057

DATE
JULY 31, 2015

SCALE AS SHOWN

DESIGNED BY RAW

DRAWN BY KCK

CHECKED BY DMP

JEFF ROBERTSON PARK STORMWATER
WETLAND SITE PLAN #15-0014

PREPARED FOR
CITY OF NORFOLK

NORFOLK VA

COMMONWEALTH OF VIRGINIA

Daren Paik

DAREN MATTHEW PAIK

Lic. No. 047582

7/30/2015

PROFESSIONAL ENGINEER

GENERAL DETAILS

SHEET NUMBER

10

Plotted By: kconf, Kevin Sheet Set: Jeff Robertson Stormwater Wetland - 116057057 Layout: EROSION & SEDIMENT CONTROL NOTES October 26, 2015 03:13:35pm K:\VAB-ENV\116057057 Blue Bird Park\CADD\Plan Sheets\8.9.10\11.12.13.14 DETAIL SHEETS.dwg
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MANAGEMENT STRATEGIES AND SEQUENCES OF EROSION CONTROL MEASURES:

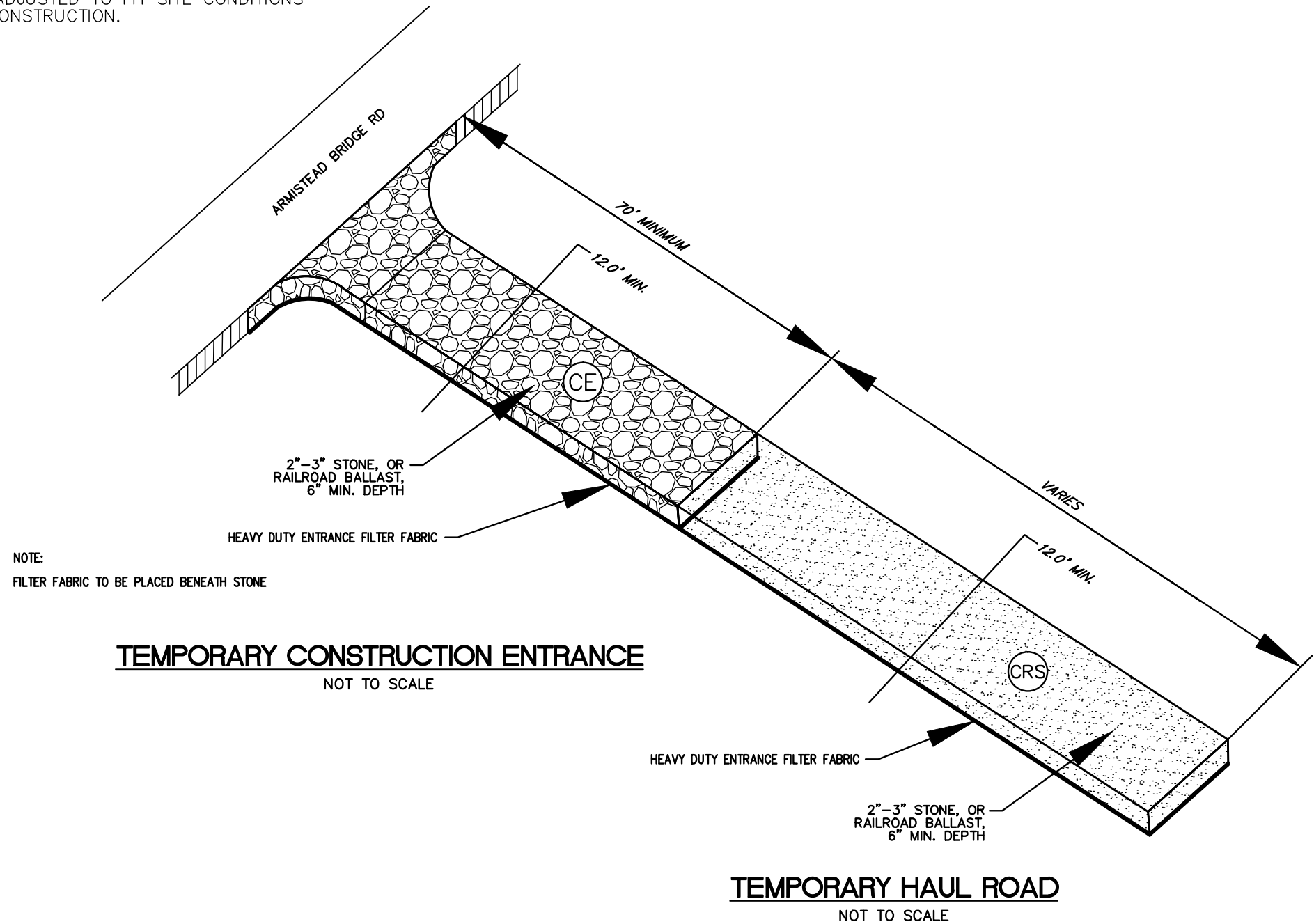
ALL EROSION CONTROL AND TREE PROTECTION DEVICES SHALL BE INSTALLED WITH THE FIRST PHASE OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED. THE ADDITION OR DELETION OF EROSION CONTROL DEVICES WILL BE AT THE DIRECTION OF THE ENGINEER. EROSION CONTROL DEVICES SHOWN ON THIS PLAN ARE THE MINIMUM NECESSARY UNTIL RELEASE OF BONDS AND OCCUPANCIES AND AS LONG AS UNVEGETATED GROUND REMAINS. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSIONS AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY.

UNLESS OTHERWISE INDICATED, ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATION OF THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL LAW AND REGULATIONS AND THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

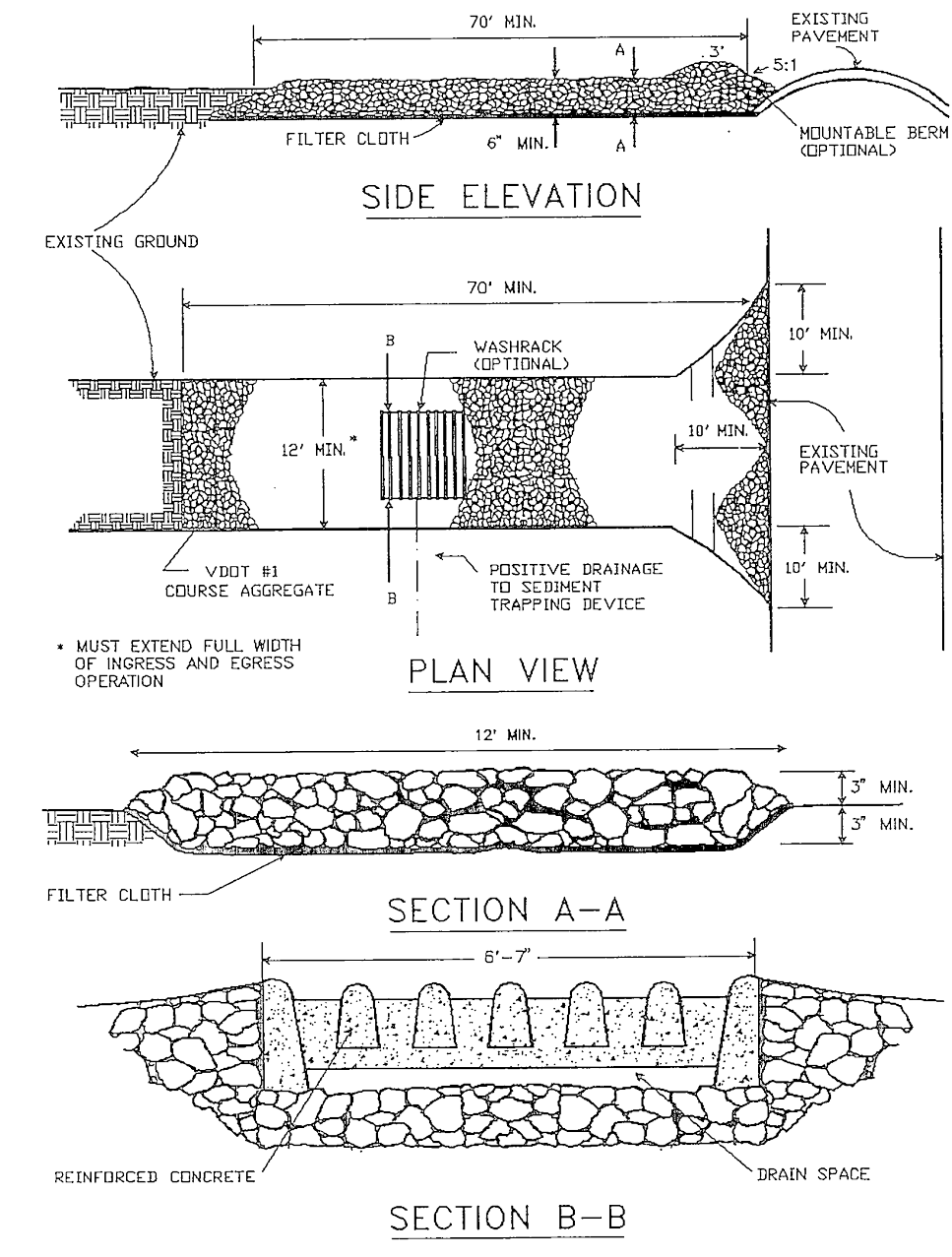
THE FOLLOWING SEQUENCE OF EVENTS AND EROSION CONTROL MEASURES SHALL BE INCORPORATED INTO THE CONSTRUCTION SCHEDULE FOR THIS PROJECT AND SHALL APPLY TO ALL CONSTRUCTION ACTIVITIES WITHIN PROJECT LIMITS.

- A) TEMPORARY CONSTRUCTION ENTRANCE(S) SHALL BE PROVIDED AT THE LOCATION(S) SHOWN ON THE PLANS. ENTRANCE(S) SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE VIRGINIA AND ESC HANDBOOK(STD. AND SPEC. 3.02). WASH RACKS ARE TO BE PROVIDED WHERE WATER IS AVAILABLE.
B) WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISIONS LOTS AS WELL AS LARGER LAND DISTURBING ACTIVITIES.
C) CONSTRUCTION TRAFFIC SHALL BE LIMITED TO ACCESS ROADS. ALL TRAFFIC IS PROHIBITED FROM CROSSING DRAINAGE SWALES AND STREAMS EXCEPT WHERE ABSOLUTELY NECESSARY (STD. AND SPEC. 3.24 VESC HANDBOOK).
- SEDIMENT BARRIERS, CONSTRUCTION ENTRANCES, AND EROSION CONTROL STONE ARE TO BE PLACED PRIOR TO CLEARING AND GRUBBING AND PRIOR TO THE FIRST PHASE OF CONSTRUCTION.
- ALL PERMANENT STORM WATER MANAGEMENT FACILITIES INCLUDING EROSION CONTROL MEASURES ARE TO BE INSTALLED AND MADE OPERATION PRIOR TO ANY OTHER LAND DISTURBING ACTIVITIES OTHER THAN SILT AND TREE PROTECTION FENCE.
- CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
- AREAS WHICH ARE NOT TO BE DISTURBED BE CLEARLY MARKED BY FENCING, FLAGS, SIGNS, ETC.
- EXISTING VEGETATION SURROUNDING THE CONSTRUCTION AREA SHALL REMAIN IN A NATURAL STATE. TREES NEAR THE CONSTRUCTION AREAS SHALL BE PROTECTED IN ACCORDANCE WITH DETAILS AND NOTES AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN.
A) PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN THIRTY (30) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR. SOIL STABILIZATION MEASURES INCLUDE VEGETATIVE ESTABLISHMENT, MULCHING, AND THE EARLY APPLICATION OF GRAVEL BASE MATERIAL ON AREAS TO BE PAVED.
B) DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
C) A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR HIS DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
D) ALL DISTURBED AREAS SHALL BE PREPARED, SEEDED, AND MULCHED. MULCH, LIME, FERTILIZER, AND SEED MIXTURE SHALL BE APPLIED IN ACCORDANCE WITH THE SEEDING CHART.
(HYDROSEEDING MAY BE USED IN PLACE OF MULCHING ON AREAS OTHER THAN DITCH BANKS.) STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIVERSIONS, AND DITCH OR WATERCOURSE BEDS AND BANKS IMMEDIATELY AFTER INSTALLATION (STD. AND SPEC. 3.36 VESC HANDBOOK).
- REFER TO PLANTING PLANS AND DETAILS FOR PERMANENT SEEDING REQUIREMENTS.
- A) ALL STORM SEWER INLETS THAT ARE TO BE USED FOR DRAINAGE DURING CONSTRUCTION SHALL BE PROTECTED WITH GRAVEL INLET PROTECTION SO THAT SEDIMENT-LOADED WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
B) BEFORE NEWLY CONSTRUCTED CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

- NOTES:
- TURNING RADIUS SUFFICIENT TO ACCOMODATE LARGE TRUCKS SHALL BE PROVIDED.
 - ENTRANCE(S) SHALL BE LOCATED TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
 - MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL BE NECESSARY.
 - ANY MATERIAL TRACKED ONTO THE ROADWAY MUST BE CLEANED UP LEGALLY AND DISPOSED OF DAILY.
 - GRAVEL CONSTRUCTION ENTRANCE(S) SHALL BE LOCATED AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.
 - DIMENSIONS OF CONSTRUCTION ENTRANCE MAY NEED TO BE ADJUSTED TO FIT SITE CONDITIONS AT TIME OF CONSTRUCTION.



STONE CONSTRUCTION ENTRANCE



Source: Adapted from 1983 Maryland Standards for Soil Erosion and Sediment Control, and Va. DSWC

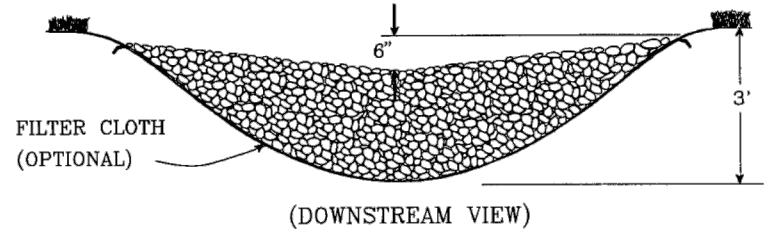
Plate 3.02-1

1992

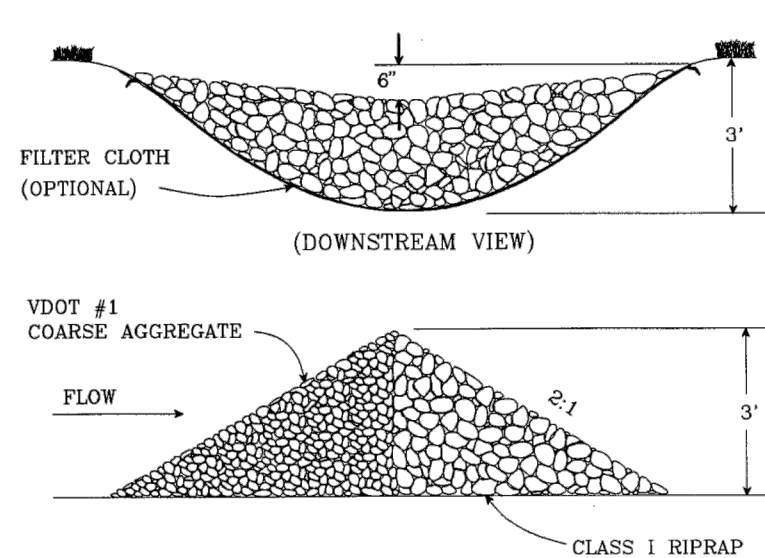
3.20

ROCK CHECK DAM

2 ACRES OR LESS OF DRAINAGE AREA:



2-10 ACRES OF DRAINAGE AREA:



Source: Va. DSWC

Plate 3.20-1

III - 187

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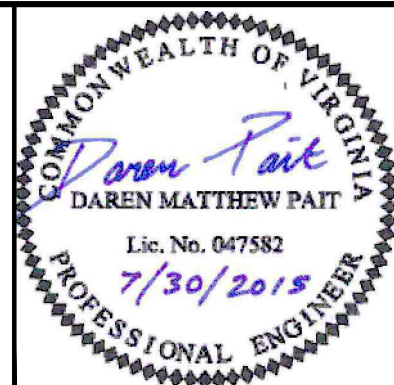
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KHA PROJECT	116057057
DATE	JULY 31, 2015
SCALE	AS SHOWN
DESIGNED BY	RAW
DRAWN BY	KCK
CHECKED BY	DMP

JEFF ROBERTSON PARK STORMWATER
WETLAND SITE PLAN #15-0014
PREPARED FOR
CITY OF NORFOLK

NORFOLK

VA



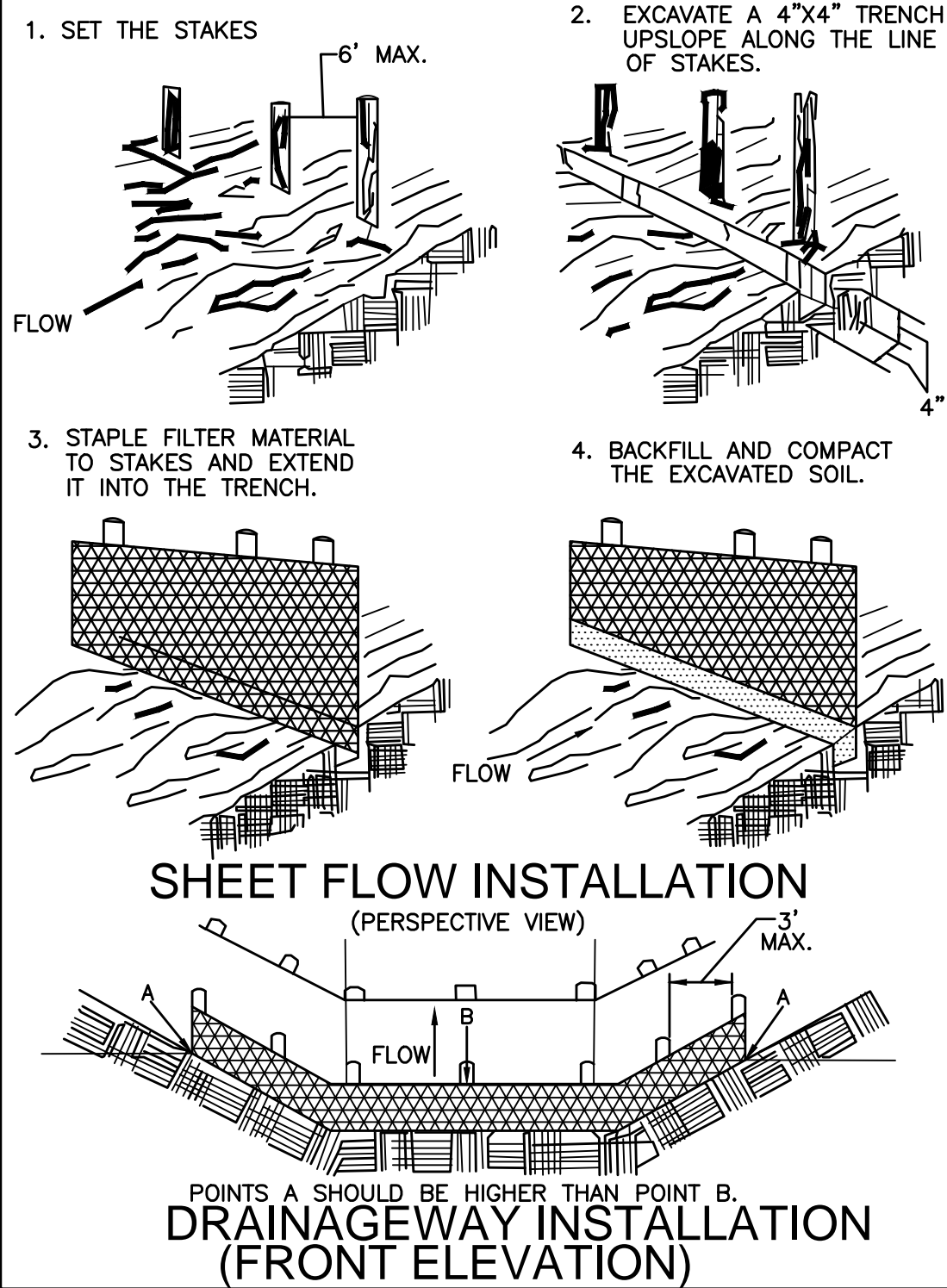
EROSION & SEDIMENT CONTROL
NOTES

SHEET NUMBER

11

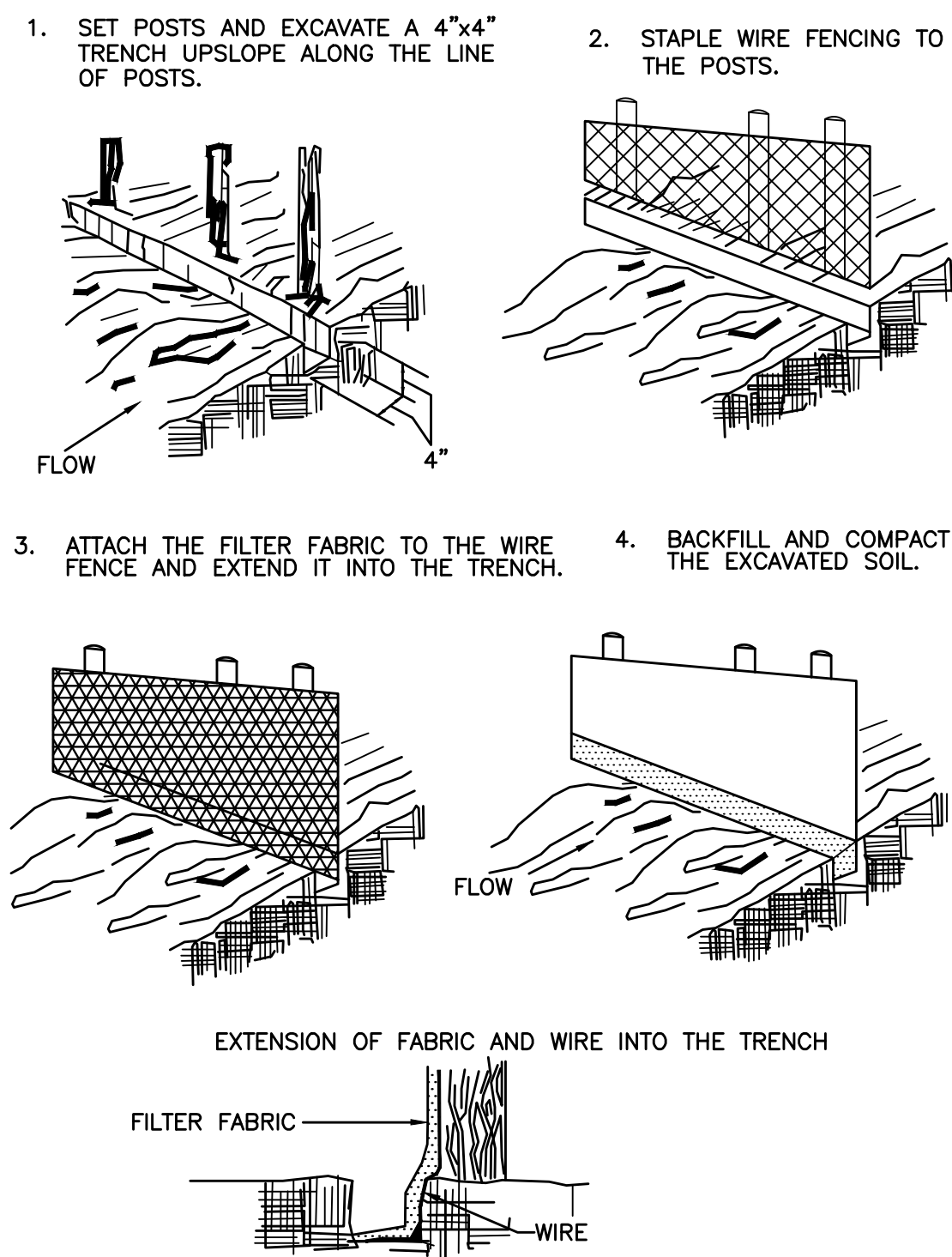
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CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)



NOTE: THE CONTRACTOR MAY USE EITHER WIRE SUPPORTED OR NON-WIRE SUPPORTED SILT FENCE.

CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)



SF

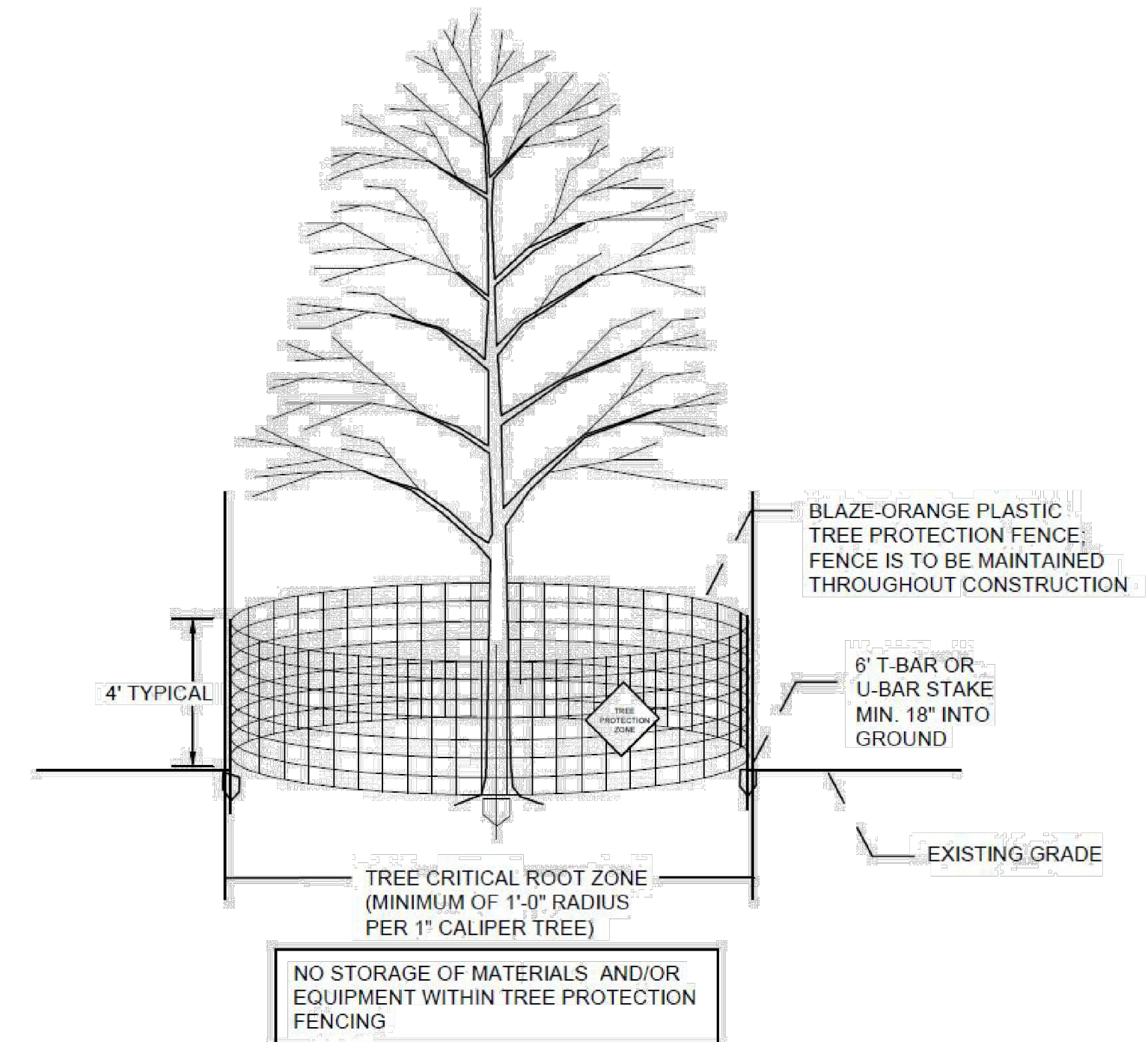
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CF

1. APPROVED PROTECTIVE TREE FENCING SHALL BE INSTALLED ALONG THE OUTER EDGE OF AND COMPLETELY SURROUNDING THE CRITICAL ROOT ZONES OF ALL TREES MARKED FOR RETENTION, PRIOR TO ANY LAND DISTURBANCE, AND SHALL REMAIN IN PLACE AND IN GOOD REPAIR UNTIL PROJECT COMPLETION. IN NO CASE SHALL THE PROTECTIVE FENCE BE INSTALLED INSIDE THE TREE'S CRITICAL ROOT ZONE UNLESS OTHERWISE SPECIFIED BY THE DEPARTMENT OF RECREATION, PARKS & OPEN SPACE.
2. ALL GRADING AND CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIAL, SUPPLIES, AND VEHICLES SHALL REMAIN OUTSIDE OF TREE PRESERVATION FENCING.
3. NO MATERIAL SHALL BE STORED INSIDE THE TREE PRESERVATION FENCING.
4. IN THE EVENT THAT A TREE DESIGNATED FOR PRESERVATION IS DESTROYED OR PERMANENTLY DISFIGURED OR SIGNIFICANTLY DAMAGED DURING THE CONSTRUCTION PROCESS, THE TREE SHALL BE REPLACED WITH A NEW TREE OR TREES. THE REPLACEMENTS SHALL TOTAL THE SAME NUMBER OF CALIPER TRUNK INCHES AS THAT OF THE TREE(S) DESTROYED.
5. TREE PROTECTION FENCING SHALL BE LOCATED AT THE DRIP LINE OF THE TREE OR 1'-0" RADIUS FOR EACH CALIPER INCH OF TREE; WHICHEVER IS LARGER.
6. THE CONTRACTOR SHALL ACQUIRE THE REQUIRED CITY TREE PERMIT IF ANY TREE PRUNING WILL BE REQUIRED ON ANY OF THE TREES WITHIN THE RIGHT OF WAY/CITY OF NORFOLK PROPERTY PRIOR TO ANY GROUND DISTURBANCE.
7. THE CONTRACTOR SHALL OBTAIN A CERTIFIED ARBORIST TO TRIM OR REMOVE ANY TREES ON CITY OF NORFOLK PROPERTY/RIGHT-OF-WAY AS REQUIRED BY THE CITY ISSUED TREE PERMIT.

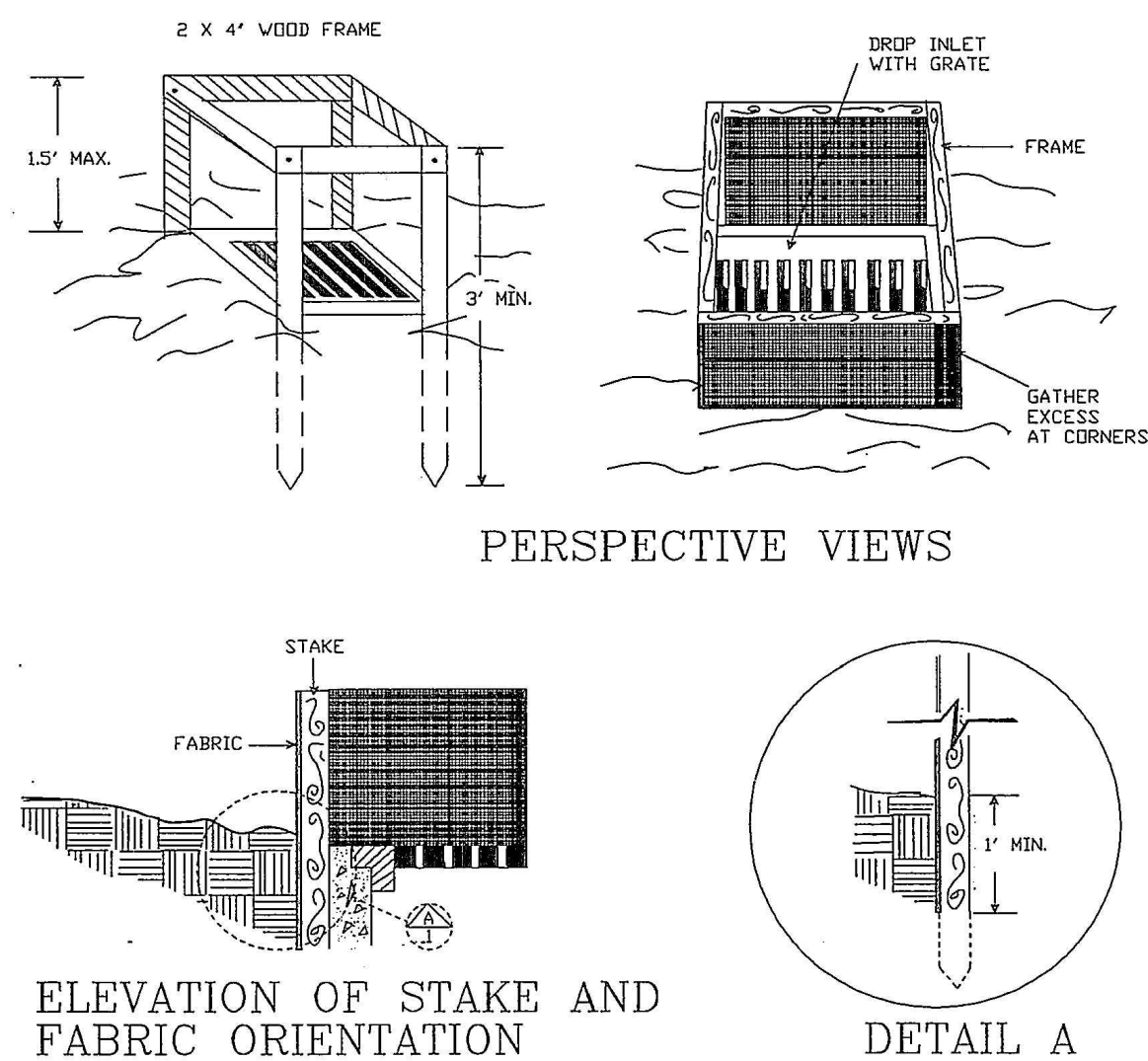
COMBINATION FENCE

(HIGH VISIBILITY ORANGE SILT FENCE) BELTON INDUSTRIES STYLE 889, 36", OR APPROVED EQUAL (SHALL BE INSTALLED IN ACCORDANCE WITH THE SILT FENCE DETAIL, THIS SHEET)



TREE PROTECTION FENCE

SILT FENCE DROP INLET PROTECTION



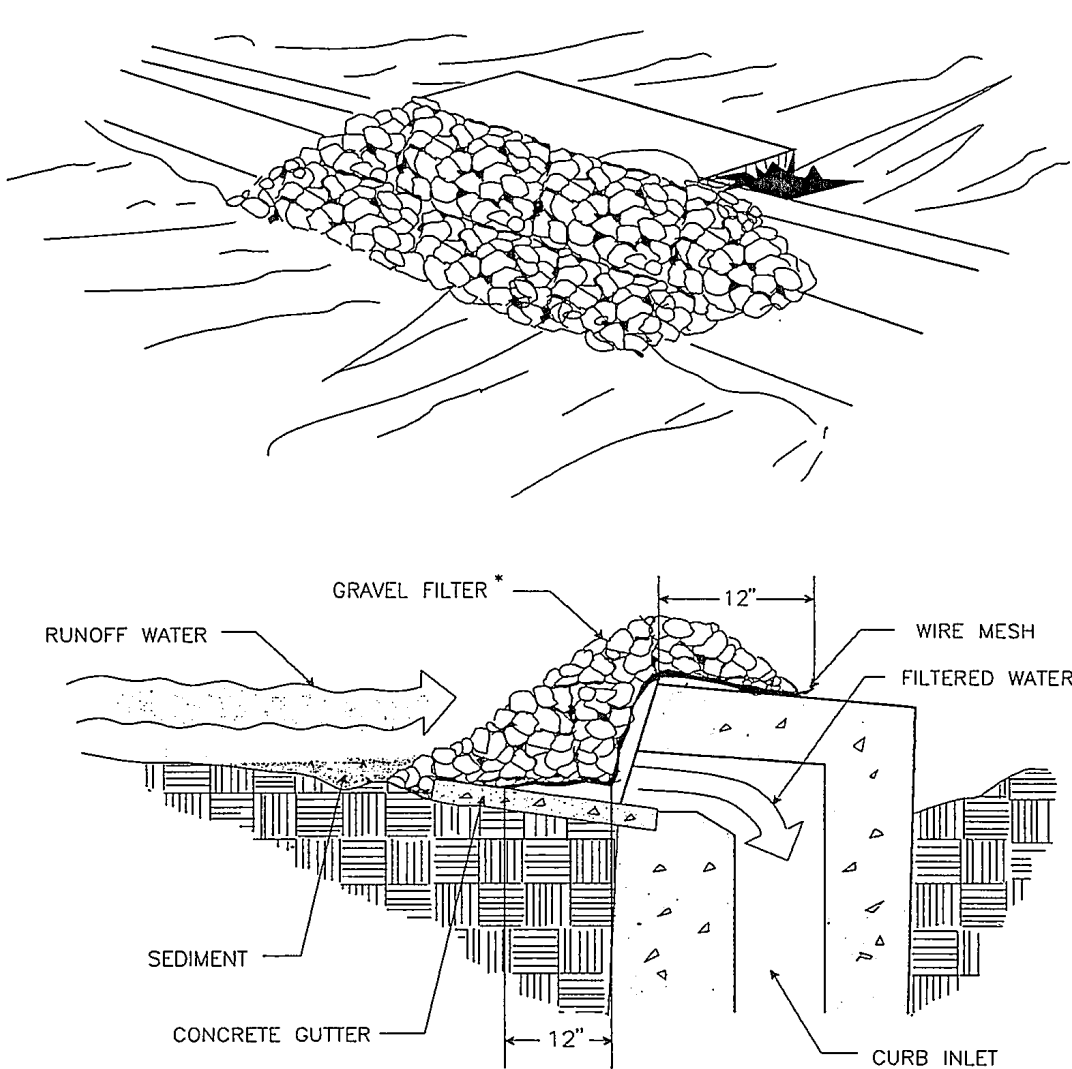
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

Source: N.C. Erosion and Sediment Control Planning and Design Manual, 1988

Plate 3.07-1

GRAVEL CURB INLET SEDIMENT FILTER



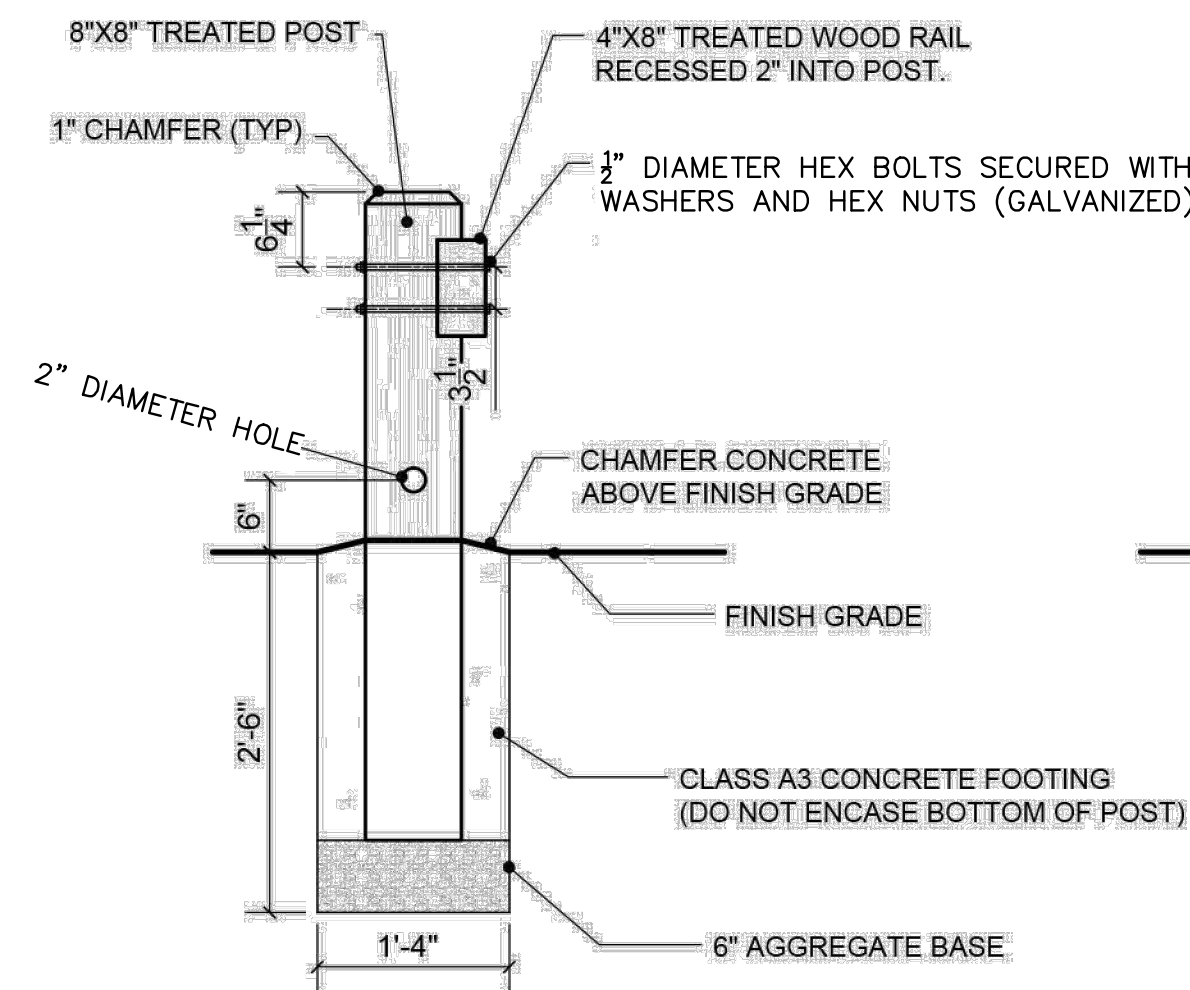
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

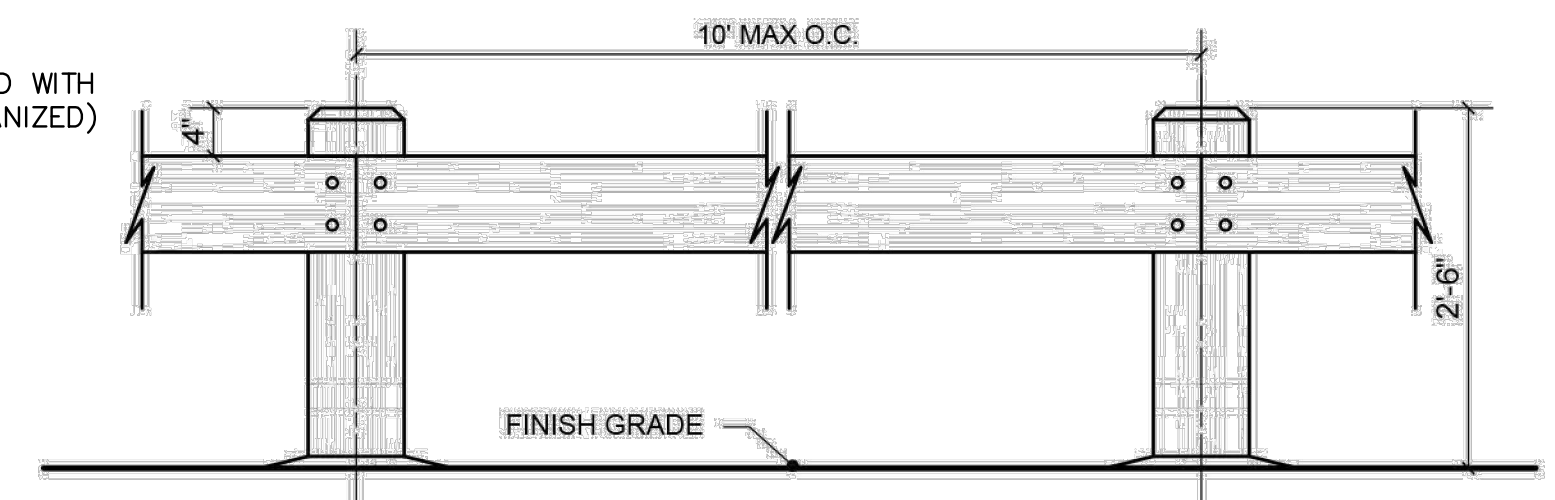
* GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE.

Source: Va. DSWC

Plate 3.07-6



WOODEN BARRIER



POST: ALL POST WILL BE 8" X 8" NOMINAL PRESSURE TREATED PINE WITH CHAMFERED POST TOP.

RAILS: ALL RAILS WILL BE 4" X 8" NOMINAL BY 10' LONG MAXIMUM PRESSURE TREATED PINE.

FASTENERS: ALL FASTENERS/HARDWARE WILL BE HOT DIPPED GALVANIZED.

FOOTINGS: ALL FOOTINGS FOR POST WILL BE MINIMUM 16" DIA. WITH A DEPTH OF 2'-6". CONCRETE WILL BE CLASS A3.

SAFETY: ALL POSTS SHALL HAVE A 2" DIA. HOLE DRILLED THROUGH, 6"-INCHES ABOVE FINISH GRADE.

DETAIL

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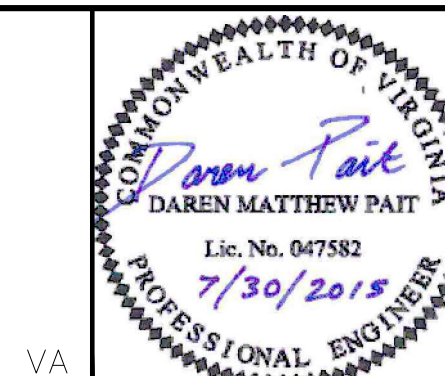
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KHA PROJECT
116057057
DATE
JULY 31, 2015
SCALE AS SHOWN
DESIGNED BY RAW
DRAWN BY KCK
CHECKED BY DMP

JEFF ROBERTSON PARK STORMWATER
WETLAND SITE PLAN #15-0014
PREPARED FOR
CITY OF NORFOLK

NORFOLK

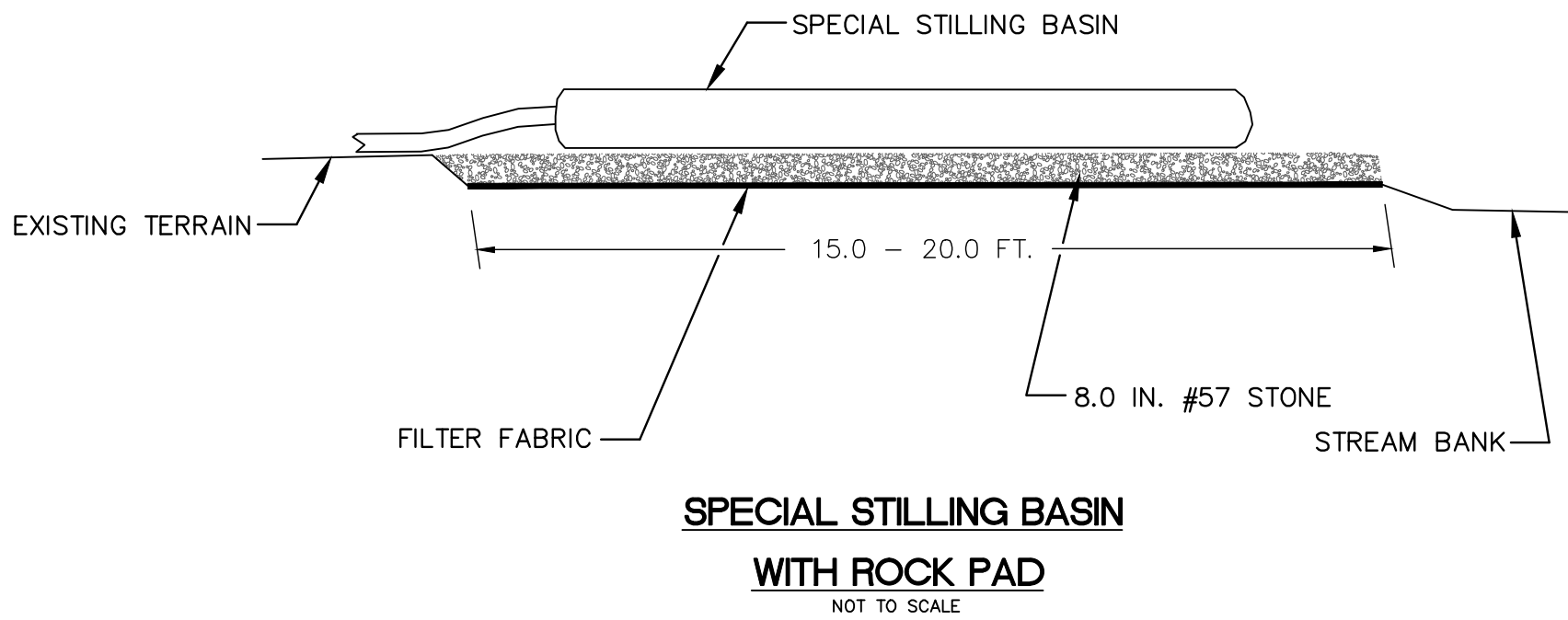
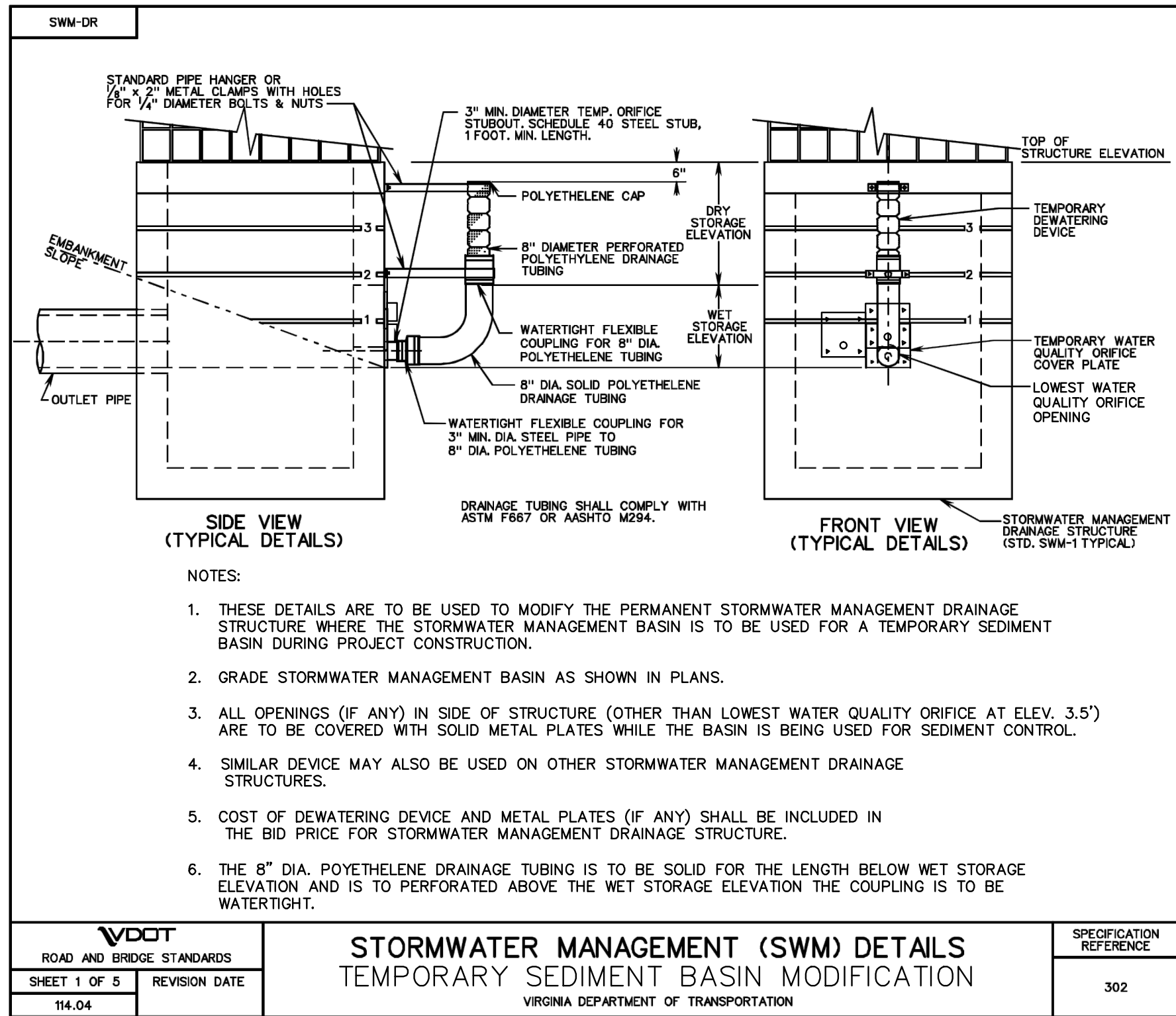
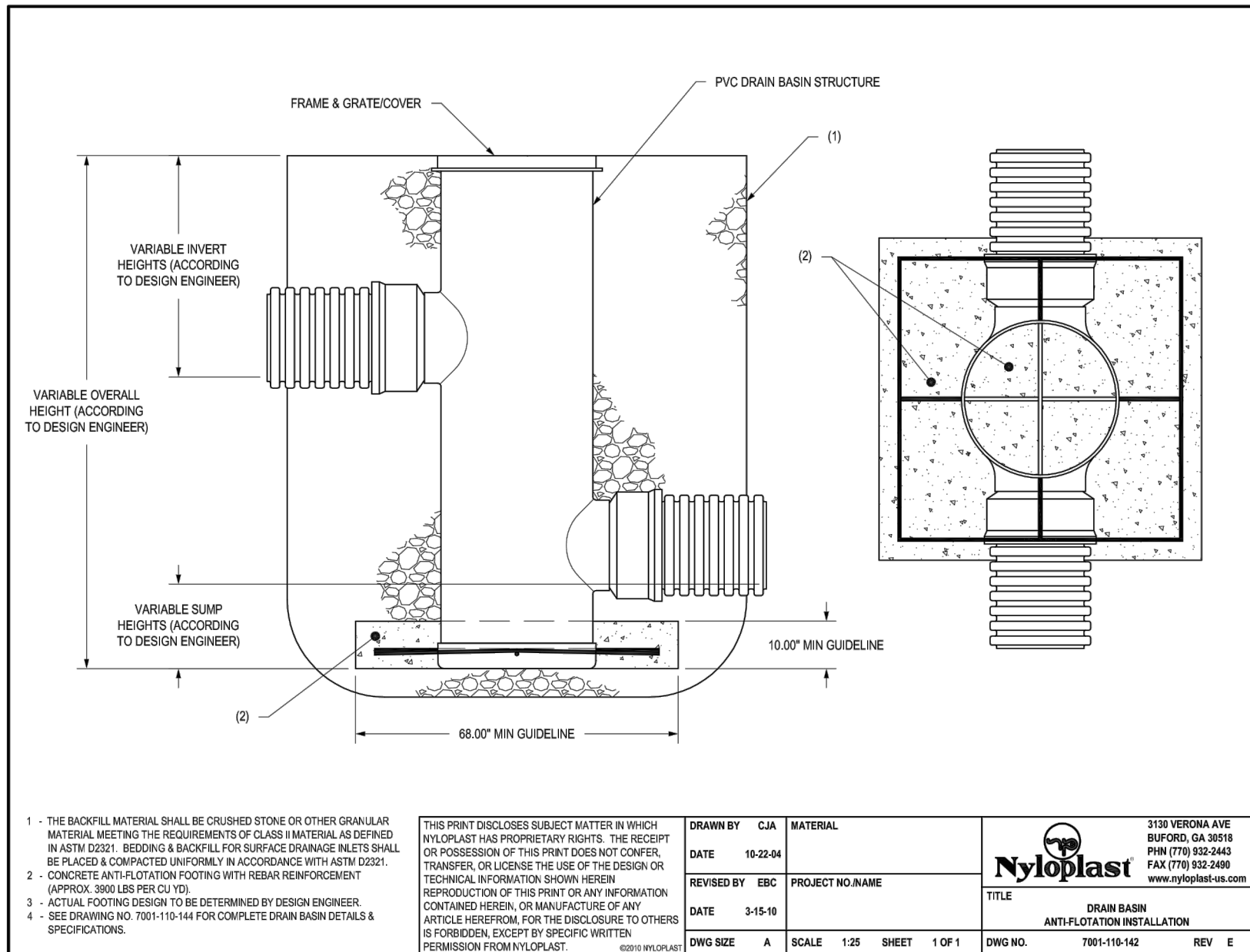
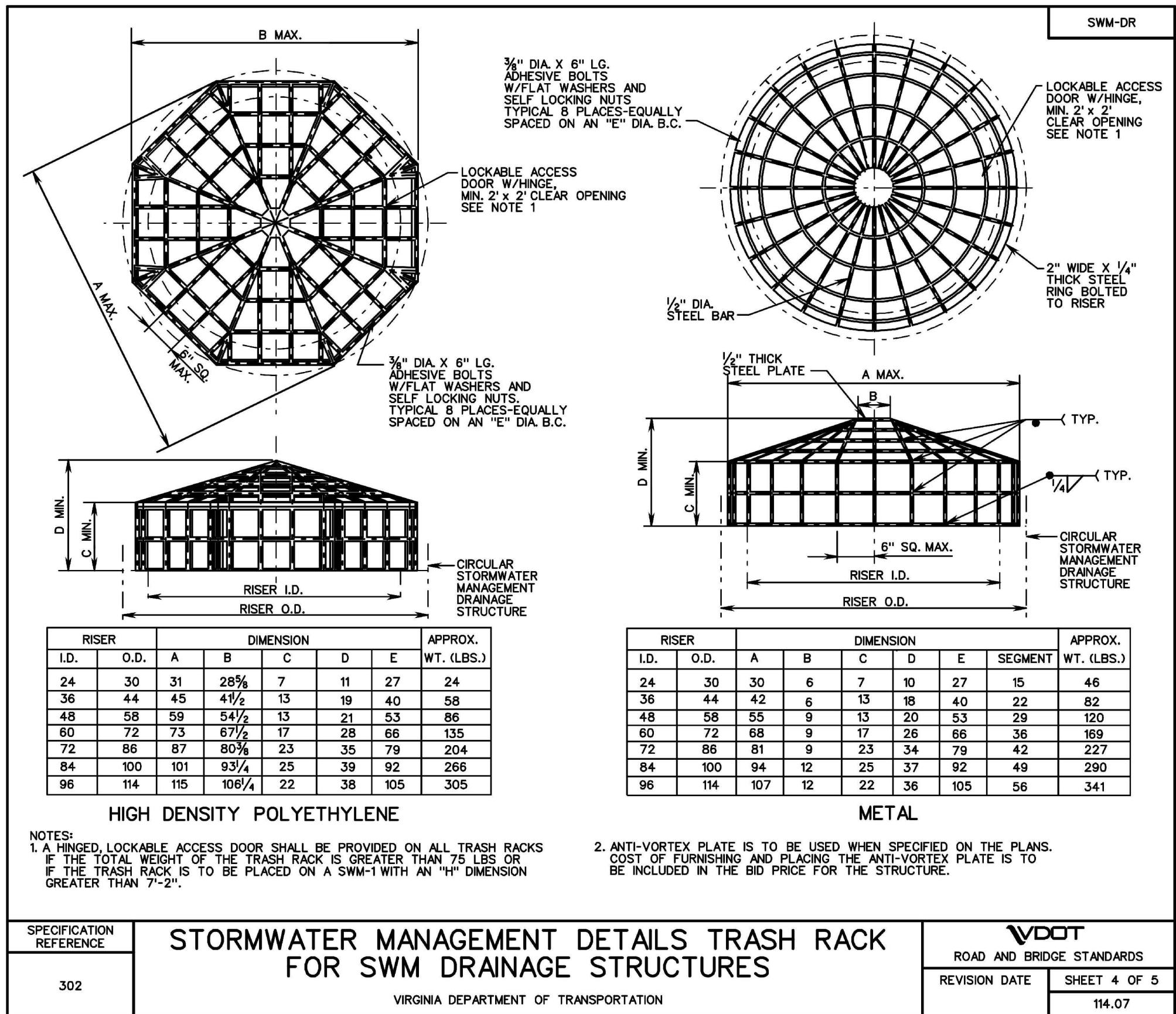
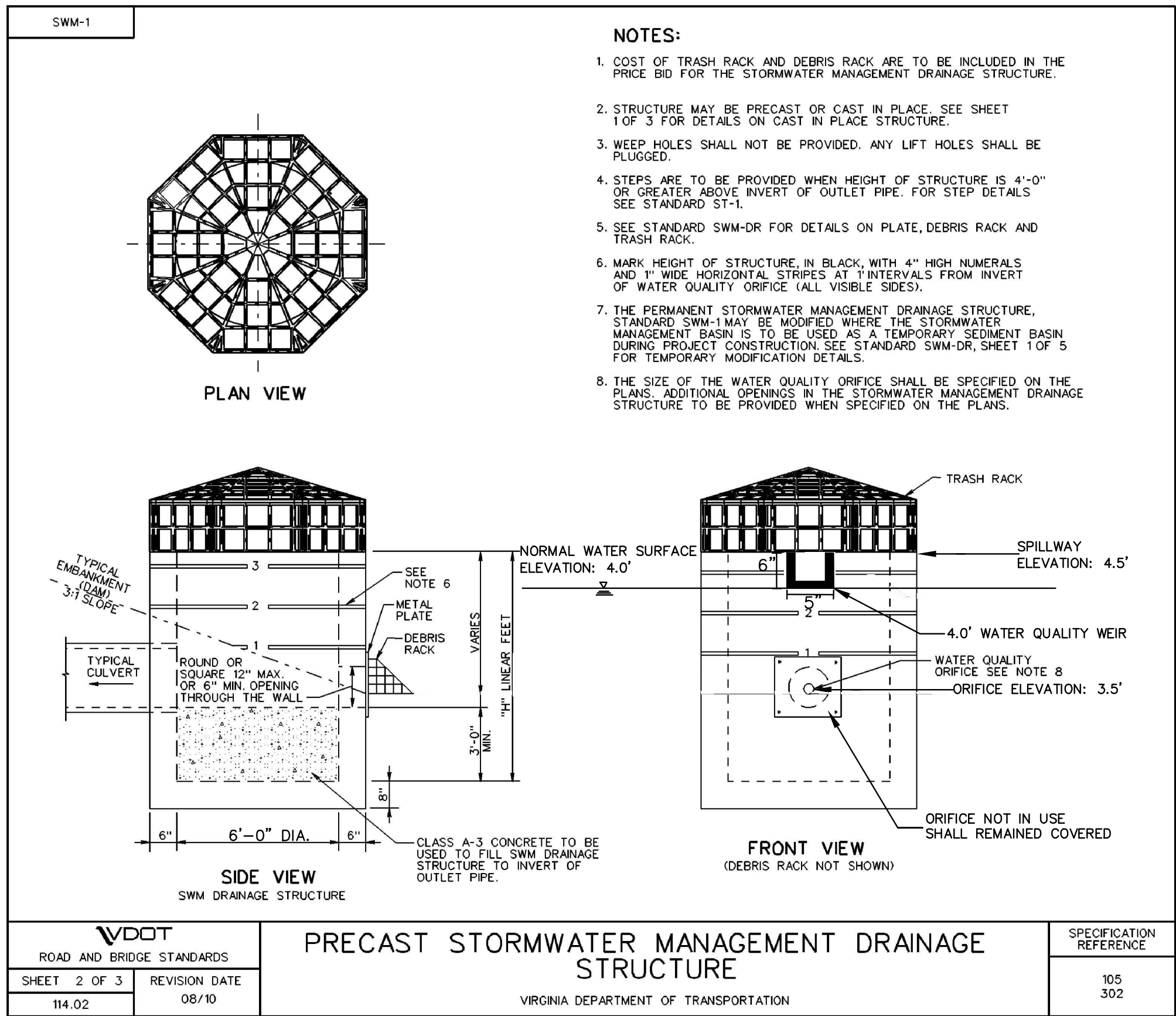


EROSION & SEDIMENT CONTROL
DETAILS

SHEET NUMBER

12

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NOTES:

1. IF SPECIAL STILLING BASIN IS PLACED IN EXISTING FLAT GROUND (SUCH AS A FIELD OR PASTURE) ADJACENT TO AN UNDISTURBED STREAM NO OUTLET IS REQUIRED (PREFERRED). IF SPECIAL STILLING BASIN IS PLACED ON DISTURBED SOIL OR IF FLOW RE-ENTERING THE STREAM IS CAUSING BANK EROSION, THEN A STABILIZED OUTLET/CHANNEL NEEDS TO BE PROVIDED.
2. THE SPECIAL STILLING BASIN(S) SHALL BE A WATER PERMEABLE FABRIC BAG THAT TRAPS SAND, SILT, AND FINES AS SEDIMENT LADEN WATER IS PUMPED INTO IT. THIS DEVICE SHALL BE CONSTRUCTED SUCH THAT IT IS PORTABLE AND CAN BE USED ADJACENT TO THE PUMP HOSE OUTLET.
3. THE SPECIAL STILLING BASIN(S) SHALL MEET THE REQUIREMENTS OF SECTION 245.03(H) OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) STANDARD SPECIFICATIONS FOR DEWATERING BAGS.
4. STONE SHALL BE EROSION CONTROL STONE (#57).
5. SEE EROSION AND SEDIMENT CONTROL PLAN ON SHEET 6 FOR POSSIBLE LOCATION OF SPECIAL STILLING BASIN.

CONSTRUCTION METHODS:

1. THE SPECIAL STILLING BASIN(S) SHALL BE A BAG CONSTRUCTED TO A MINIMUM SIZE OF 10'x15' MADE FROM A NONWOVEN FABRIC. IT SHALL HAVE A SEWN-IN 8-INCH (20.3CM) MAXIMUM SPOUT FOR RECEIVING PUMP DISCHARGE. THE BAG SEAMS SHALL BE SEWN WITH A DOUBLE NEEDLE MACHINE USING A HIGH STRENGTH THREAD.
2. THE FABRIC USED TO CONSTRUCT THE BAG SHALL BE STABILIZED TO PROVIDE RESISTANCE TO ULTRA-VIOLET DEGRADATION AND MEET THE FOLLOWING SPECIFICATIONS FOR FLOW RATES, STRENGTH, AND PERMEABILITY:
3. THE SPECIAL STILLING BASIN(S) SHALL BE PLACED SO THE INCOMING WATER FLOWS INTO AND THROUGH THE BAG WITHOUT CAUSING EROSION. THE NECK OR SPOUT OF THE BAG SHALL BE TIED OFF TIGHTLY TO STOP THE WATER FROM FLOWING OUT OF THE BAG WITHOUT GOING THROUGH THE WALLS.
4. THE SPECIAL STILLING BASIN(S) SHALL BE REPLACED AND DISPOSED OF WHEN IT IS 3/4 FULL OF SEDIMENT, WHEN IT IS IMPRACTICAL FOR THE BAG TO FILTER THE SEDIMENT OUT AT A REASONABLE FLOW RATE, OR WHEN IT BECOMES PUNCTURED OR TORN.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SUFFICIENT QUANTITY OF BAGS TO CONTAIN SILT FROM PUMPED EFFLUENT DURING CONSTRUCTION.

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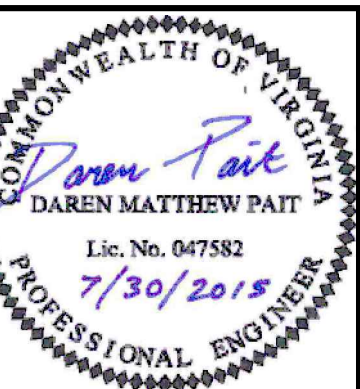
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NORFOLK

JEFF ROBERTSON PARK STORMWATER WETLAND SITE PLAN #15-0014

PREPARED FOR
CITY OF NORFOLK

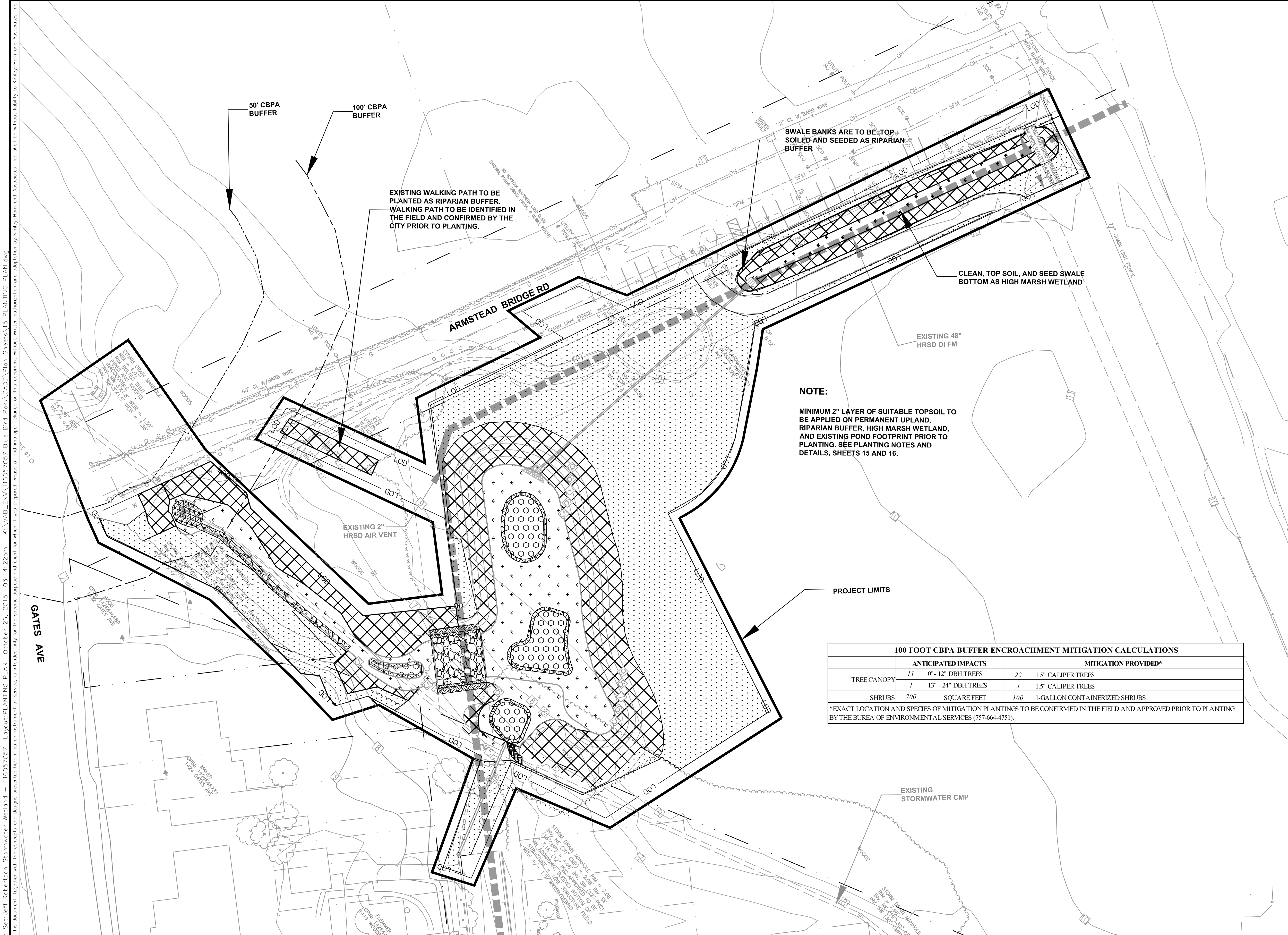
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CONSTRUCTION DETAILS

SHEET NUMBER

13



LEGEND

- CBPA 50' BUFFER
- CBPA 100' BUFFER
- PROJECT BOUNDARY LINE
- RIPARIAN BUFFER
- HIGH MARSH WETLAND
- LOW MARSH WETLAND
- DEEP POOL (NO PLANTINGS)
- COIR FIBER MATTING (PLANTED WITH UPLAND SEED MIX)
- PERMANENT UPLAND (MAINTAINED)

GENERAL NOTES

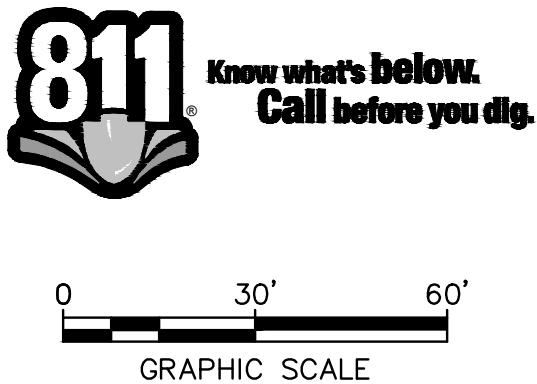
ALL VEGETATION, WOODY, OR OTHERWISE, EXCEPT LAWN, ORNAMENTAL GRASS AND FLOWERS LESS THAN TWENTY-FOUR (24) INCHES IN HEIGHT WITHIN THE 100' CBPA BUFFER REQUIRES A PERMIT FOR REMOVAL, ALTERATION, OR WORK WITHIN THE CRITICAL ROOT ZONE FROM BUREAU OF ENVIRONMENTAL SERVICES (664-4751) WITH SUBSEQUENT MITIGATION REQUIREMENTS.

ALL WORK MUST BE PERFORMED BY AN INTERNATIONAL SOCIETY OF ARBORICULTURE CERTIFIED ARBORIST.

ALL DISTURBED AREAS SHALL BE STABILIZED.

100 FOOT CBPA BUFFER ENCROACHMENT MITIGATION CALCULATIONS					
ANTICIPATED IMPACTS			MITIGATION PROVIDED*		
TREE CANOPY	11	0" - 12" DBH TREES	22	1.5" CALIPER TREES	
	1	13" - 24" DBH TREES	4	1.5" CALIPER TREES	
SHRUBS	700	SQUARE FEET	100	1-GALLON CONTAINERIZED SHRUBS	

*EXACT LOCATION AND SPECIES OF MITIGATION PLANTINGS TO BE CONFIRMED IN THE FIELD AND APPROVED PRIOR TO PLANTING BY THE BUREAU OF ENVIRONMENTAL SERVICES (757-664-4751).



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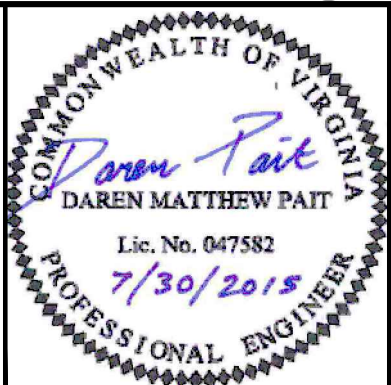
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PLANTING PLAN

SHEET NUMBER

14

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GENERAL NOTES:

TEMPORARY SEEDING AND MULCHING WILL OCCUR WITHIN SEVEN (7) DAYS OF DISTURBANCE TO STABILIZE AREAS OF BARE SOIL. PERMANENT PLANTING AND SEEDING SHALL BE COMPLETED BETWEEN NOVEMBER 15 AND MARCH 15. PLUGS ARE TO BE PLANTED BETWEEN APRIL 1 AND SEPTEMBER 30. HOWEVER, THE CITY PROJECT MANAGER SHALL HAVE FINAL SAY WHEN TO BEGIN PLANTING.

PRIOR TO PERMANENT PLANTING AND SEEDING, THE SITE SOILS SHALL BE PREPARED FOR PLANTING. CONTRACTOR SHALL RIP AND DISC ALL SOILS WITHIN THE RIPARIAN UPLAND, HIGH MARSH, AND LOW MARSH ZONES TO IMPROVE COMPACTED SOILS AND ELIMINATE CHANNELIZED FLOW.

THE SITE SHOULD HAVE A MINIMUM 2" LAYER OF SUITABLE TOPSOIL THAT MEETS DCR SPECIFICATIONS OF 5% ORGANIC CONTENT BEFORE THE EARTHWORK IS CONSIDERED FINALIZED.

EXCAVATED TOPSOIL IS TO BE STOCKPILED SEPARATE FROM OTHER EXCAVATED MATERIALS. STOCKPILED TOPSOIL IS TO BE SPREAD EVENLY OVER THE SITE AFTER THE MAJORITY OF EARTHWORK IS COMPLETE. AFTER PLACEMENT OF TOPSOIL, ALL FINAL GRADES SHOULD MATCH THE ELEVATIONS AS SHOWN ON THE PLAN VIEW. IF NOT ENOUGH SUITABLE TOPSOIL EXISTS ON-SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPORTING TOPSOIL FROM OFF-SITE.

A 1" BLANKET OF CERTIFIED ORGANIC COMPOST SHOULD BE APPLIED TO ALL WETLAND CELLS AND ADJACENT RIPARIAN PLANTING AREAS.

TREE AND SHRUB FERTILIZER SHALL BE AGRIFORM FERTILIZER TABLETS, FOREST STARTER 22-8-2 TIME RELEASE TABLETS, OR EQUAL PRODUCT. PLACE ONE (1) TABLET PER PLANT IN PLANTING PIT. APPLY IN SINGLE APPLICATION. ALL FERTILIZER MUST BE NON-PETROLEUM BASED ORGANIC.

THE SITE SHALL BE PLANTED BY THE ZONES DEPICTED IN THE PLANTING PLANS WITH SPECIES LISTED IN THE ACCOMPANYING PLANTING TABLE.

PLANTING ZONE DESCRIPTIONS:

PERMANENT UPLAND - THIS ZONE COVERS THE AREAS OF THE SITE NOT DESIGNATED AS RIPARIAN BUFFER OR WETLAND PLANTING ZONES.

RIPARIAN BUFFER - THIS ZONE SERVES AS A RIPARIAN BUFFER FOR THE WETLAND SYSTEM. THIS ZONE COVERS THE AREAS OF THE SITE NOT DESIGNATED AS PERMANENT UPLAND OR WETLAND PLANTING ZONES.

HIGH MARSH - THIS ZONE DESIGNATES AREAS OF THE WETLAND THAT WILL HAVE PERIODIC INUNDATION DURING NORMAL CONDITIONS.

LOW MARSH - THIS ZONE DESIGNATES AREAS OF THE WETLAND THAT WILL BE INUNDATED UP TO 1.5 FEET OF WATER DURING NORMAL CONDITIONS.

DEEP POOL - THIS ZONE DESIGNATES AREAS OF THE WETLAND THAT WILL BE INUNDATED BY UP TO 3.8 FEET OF WATER DURING NORMAL CONDITIONS AND WILL RECEIVE NO PLANTINGS.

NOTE:
SOIL AMENDMENTS APPLY SOIL AMENDMENTS ACCORDING TO THE FOLLOWING TABLE:

Ammendment Addition (lb/acre)			
Lime	N	P ₂ O ₅	K ₂ O
1,000	0	35	40

MULCH:
APPLY 2,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

VOLUME OF TOPSOIL REQUIRED FOR APPLICATION TO VARIOUS DEPTHS		
DEPTHS (INCHES)	CUBIC YARDS PER 1,000 SQ.	CUBIC YARDS PER ACRE
3	9.3	536

Tree and Shrub Planting List					
Scientific Name		Common Name	Riparian Upland Buffer	High Marsh	Low Marsh
Genus	Species				
<i>Acer</i>	<i>rubrum</i> var. <i>trilobum</i>	Red Maple	CT		
<i>Betula</i>	<i>nigra</i>	River Birch	CT		
<i>Cephalanthus</i>	<i>occidentalis</i>	Common Buttonbush		CS	P
<i>Iris</i>	<i>virginica</i>	Virginia Iris		P	
<i>Nuphar</i>	<i>luteum</i>	Spatterdock			P
<i>Peltandra</i>	<i>virginica</i>	Arrow Arum		P	P
<i>Platanus</i>	<i>occidentalis</i>	Sycamore	CT		
<i>Pontederia</i>	<i>cordata</i>	Pickernelweed		P	P
<i>Sagittaria</i>	<i>latifolia</i>	Broadleaf Arrowhead		P	P
<i>Saururus</i>	<i>cernuus</i>	Lizard's Tail		P	P
<i>Quercus</i>	<i>phellos</i>	Willow Oak	CT		
<i>Cornus</i>	<i>florida</i>	Flowering Dogwood	CT		
<i>Quercus</i>	<i>bicolor</i>	Swamp White Oak	CT		
<i>Nyssa</i>	<i>sylvatica</i>	Black Gum	CT		
<i>Vaccinium</i>	<i>corymbosum</i>	Highbush Blueberry	CS		
<i>Sambucus</i>	<i>nigra</i>	Black Elderberry	CS		
<i>Alnus</i>	<i>serrulata</i>	Hazel Alder		CS	
<i>Taxodium</i>	<i>distichum</i>	Bald Cypress	CT	CT	

CT = Containerized Trees
CS = Containerized Shrubs
P = Wetland Plug

NOTE:

- ALL PLANT MATERIAL SHALL MEET THE MINIMUM SPECIFICATIONS AND STANDARDS DESCRIBED IN THE MOST CURRENT EDITION OF AMERICAN STANDARD FOR NURSERY STOCK, 1986, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMAN, 1250 I STREET, N.W., SUITE 500, WASHINGTON, D.C. 2005
- TREES SHALL BE PLANTED WITH AN AVERAGE SPACING OF 20.0'
- CHOOSE AT LEAST 5 TREE SPECIES. EACH TREE SPECIES SHALL COMPRISE NO LESS THAN 20% AND NO MORE THAN 40% OF THE TREE COMMUNITY.
- CONTAINERIZED 1.5" AND 2" CALIPER TREES SHALL BE EVENLY SPACED THROUGHOUT THE RIPARIAN BUFFER AND PERMANENT UPLAND ZONES.
- SHRUBS SHALL BE PLANTED WITH AN AVERAGE SPACING OF 6.0'
- CHOOSE AT LEAST 3 CONTAINERIZED SHRUB SPECIES. EACH SPECIES SHALL COMPRISE NO LESS THAN 35% AND NO MORE THAN 65% OF THE SHRUB COMMUNITY.
- SHRUBS MUSH BE PLANTED AT LEAST 10' FROM CENTERLINE OF SANITARY SEWER LINE. TREES MUST BE PLANTED AT LEAST 15' FROM SANITARY SEWER LINE. SEED MIXES AND HERBACEOUS PLUGS ARE NOT RESTRICTED BY THE SEWER LINE.
- PLUGS IN MARSH AREAS SHOULD BE PLANTED IN CLUMPS. APPROXIMATELY 25% OF MARSH AREAS SHOULD BE PLANTED, AND THOSE PLANTINGS SHOULD BE INSTALLED AS RANDOMLY SPACED CLUMPS. SPACING WITHIN CLUMPS SHOULD BE 18" O.C. CHOOSE AT LEAST 4 PLUGS SPECIES FROM LIST ABOVE FOR THE HIGH MARSH AND AT LEAST 4 FROM THE LIST FOR THE LOW MARSH. NO PLUG SPECIES SHALL COMPRISE LESS THAN 20% OF THE TOTAL OF THE PLANTED PLUG SPECIES.
- PERMANENT WETLAND SEED MIX SHALL BE APPLIED TO AREAS SHOWN AS HIGH MARSH ON PLANTING PLAN. PERMANENT RIPARIAN SEED MIX SHALL BE APPLIED TO AREAS SHOWN AS RIPARIAN BUFFER. PERMANENT UPLAND SEED MIX SHALL BE APPLIED TO AREAS SHOWN AS PERMANENT UPLAND.

PLANT ZONE, ACREAGE, AND PLANTING ESTIMATES						
ZONE	ACRES	WETLAND PLANT PLUGS	CONTAINERIZED TREES		CONTAINERIZED SHRUBS	PERMANENT SEEDING
			±1.5" CALIPER DBH	≥2" CALIPER DBH		
PERMANENT UPLAND	0.675	-	-	-	-	Permanent Upland Seeding
RIPARIAN BUFFER	0.392	-	30	15	25	Permanent Riparian Seeding
HIGH MARSH	0.215	1040	5	-	75	Permanent Wetland Seeding
LOW MARSH	0.023	110	-	-	-	-
DEEP POOL	0.052	-	-	-	-	-

Permanent Wetland Seed Mix- High Marsh and Low Marsh		
Scientific Name	Common Name	%
<i>Panicum rigidulum</i>	Redtop Panicgrass	26
<i>Panicum anceps</i>	Beaked panicgrass	20
<i>Elymus virginicus</i>	Virginia Wildrye	12
<i>Carex lurida</i>	Lurid (Shallow) Sedge	10
<i>Carex albulutescens</i>	Greenwhite Sedge	7
<i>Carex lupulina</i>	Hop Sedge	5
<i>Bidens aristosa</i>	Showy Tickseed Sunflower	2
<i>Hibiscus moscheutos</i>	Crimsoneyed Rosemallow	2
<i>Eupatorium coelestinum</i>	Mistflower	2
<i>Scirpus cyperinus</i>	Woolgrass	2
<i>Juncus effusus</i>	Soft Rush	2
<i>Helenium autumnnale</i>	Common Sneezeweed	2
<i>Juncus coriaceus</i>	Leathery Rush	1
<i>Vernonia noveboracensis</i>	New York Ironweed	1
<i>Carex alata</i>	Broadwing Sedge	1
<i>Saururus cernuus</i>	Lizard's Tail	1
<i>Tridens flavus</i>	Purple Top	1

Permanent Riparian Seed Mix		
Scientific Name	Common Name	%
<i>Panicum clandestinum</i>	Deertongue	25
<i>Panicum rigidulum</i>	Redtop Panicgrass	25
<i>Panicum anceps</i>	Beaked Panicgrass	21
<i>Elymus virginicus</i>	Virginia Wildrye	20
<i>Switchgrass</i>	Panicum virgatum	5
<i>Agrostis perennans</i>	Autumn Bentgrass	2
<i>Eupatorium coelestinum</i>	Mistflower	2

TEMPORARY SEEDING

TABLE 3.31-B ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS *QUICK REFERENCE FOR ALL REGIONS*		
Planting Dates	Species	Rate (lbs./acre)
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (<i>Lolium multi-florum</i>) & Cereal (Winter) Rye (<i>Sscale cereale</i>)	50 - 100
Feb. 16 - Apr. 30	Annual Ryegrass (<i>Lolium multi-florum</i>)	60 - 100
May 1 - Aug 31	German Millet (<i>Setaria italica</i>)	50

Source: Va. DSWC

Permanent Upland Seed Mix (150 lbs per acre)			
Slope 3:1 or less	%	Slope Steeper than 3:1	%
Tall Fescue	85.5	Tall Fescue	62.5
Creeping Red Fescue	1.5	Bermudagrass	10
Seasonal Nurse Crop	13	Creeping Red Fescue	1.5
		Seasonal Nurse Crop	13
		Sericea Lespedeza	13

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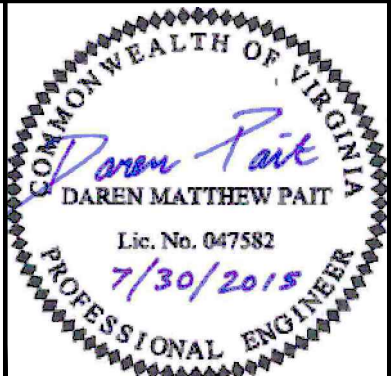
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WWW.KIMLEY-HORN.COM

KHA PROJECT 116057057	
DATE OCT. 20, 2015	
SCALE AS SHOWN	
DESIGNED BY RAW	
DRAWN BY KCK	
CHECKED BY DMP	

JEFF ROBERTSON PARK STORMWATER
WETLAND SITE PLAN #15-0014
PREPARED FOR
CITY OF NORFOLK

NORFOLK

VA

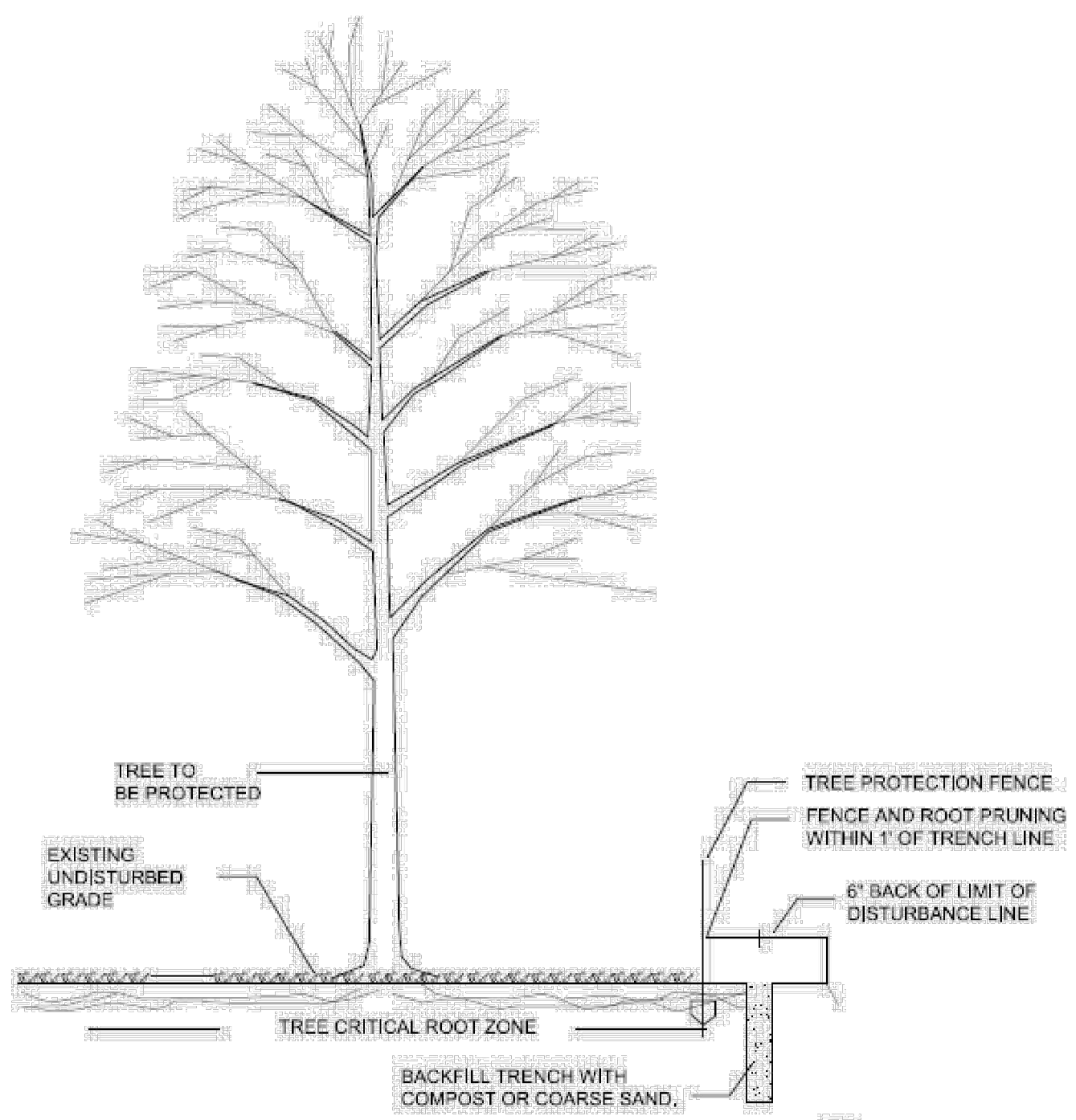


PLANTING NOTES

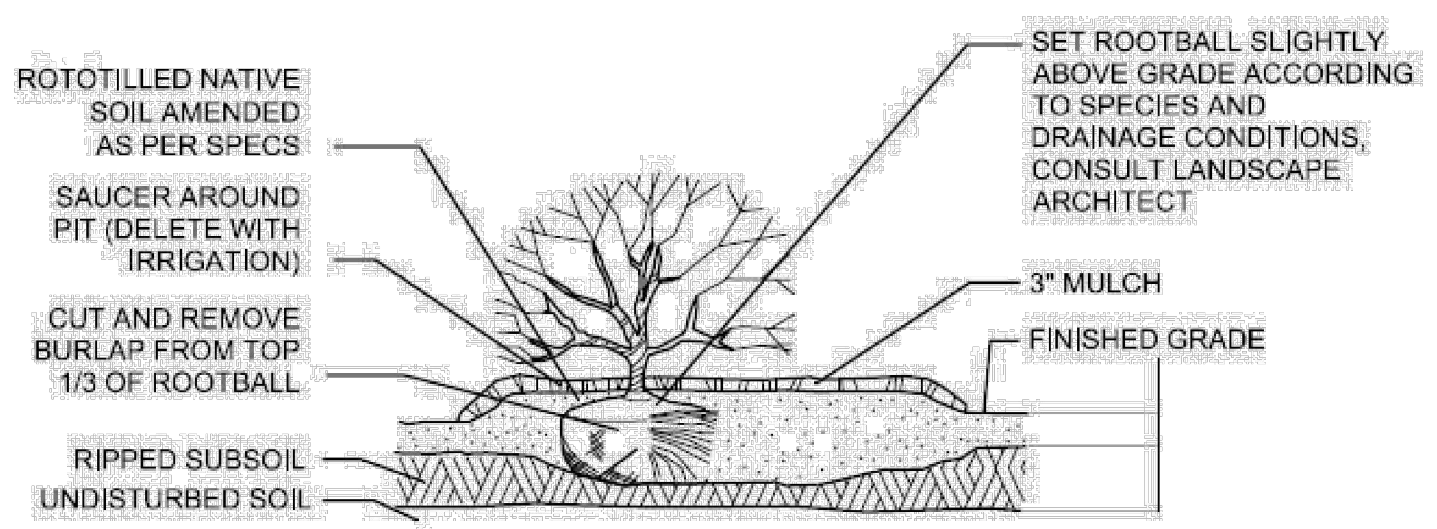
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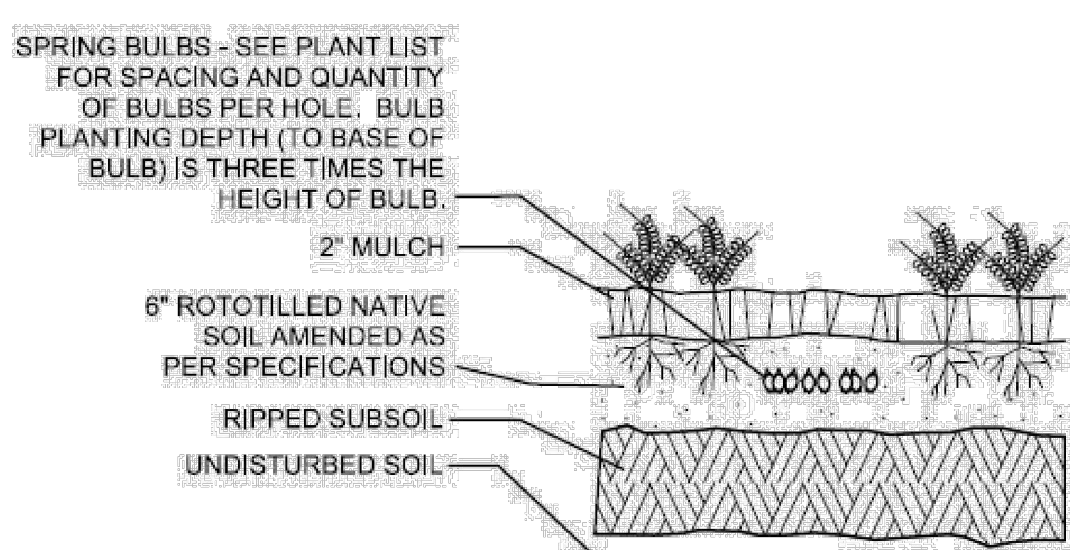
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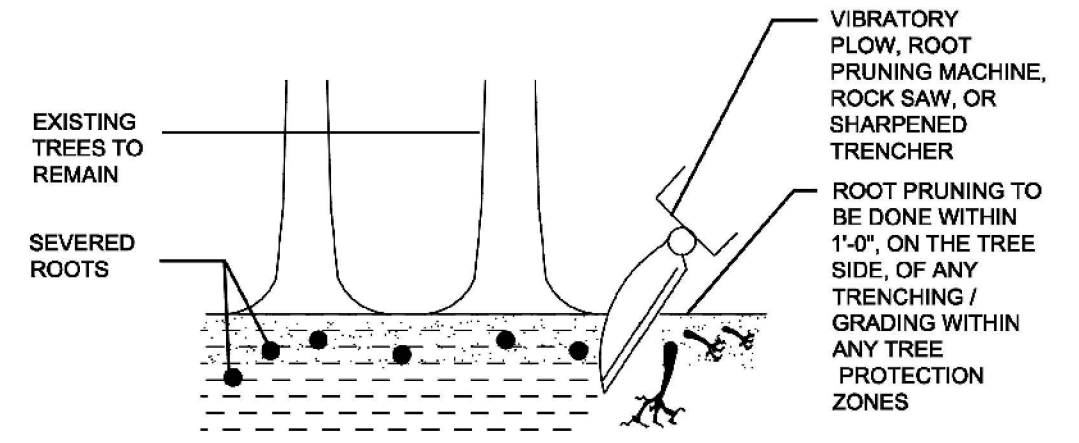
ROOT PRUNING
SCALE :



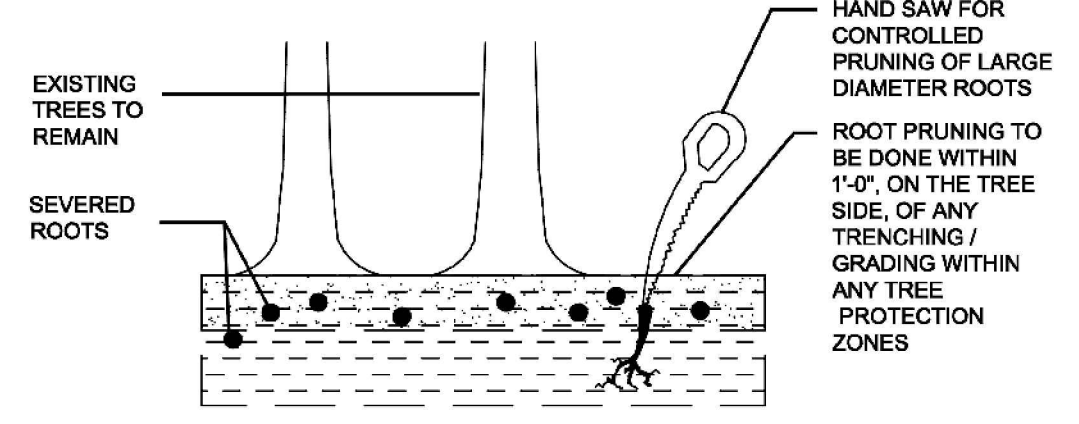
TYPICAL SHRUB PLANTING DETAIL
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TYPICAL BULB PLANTING DETAIL
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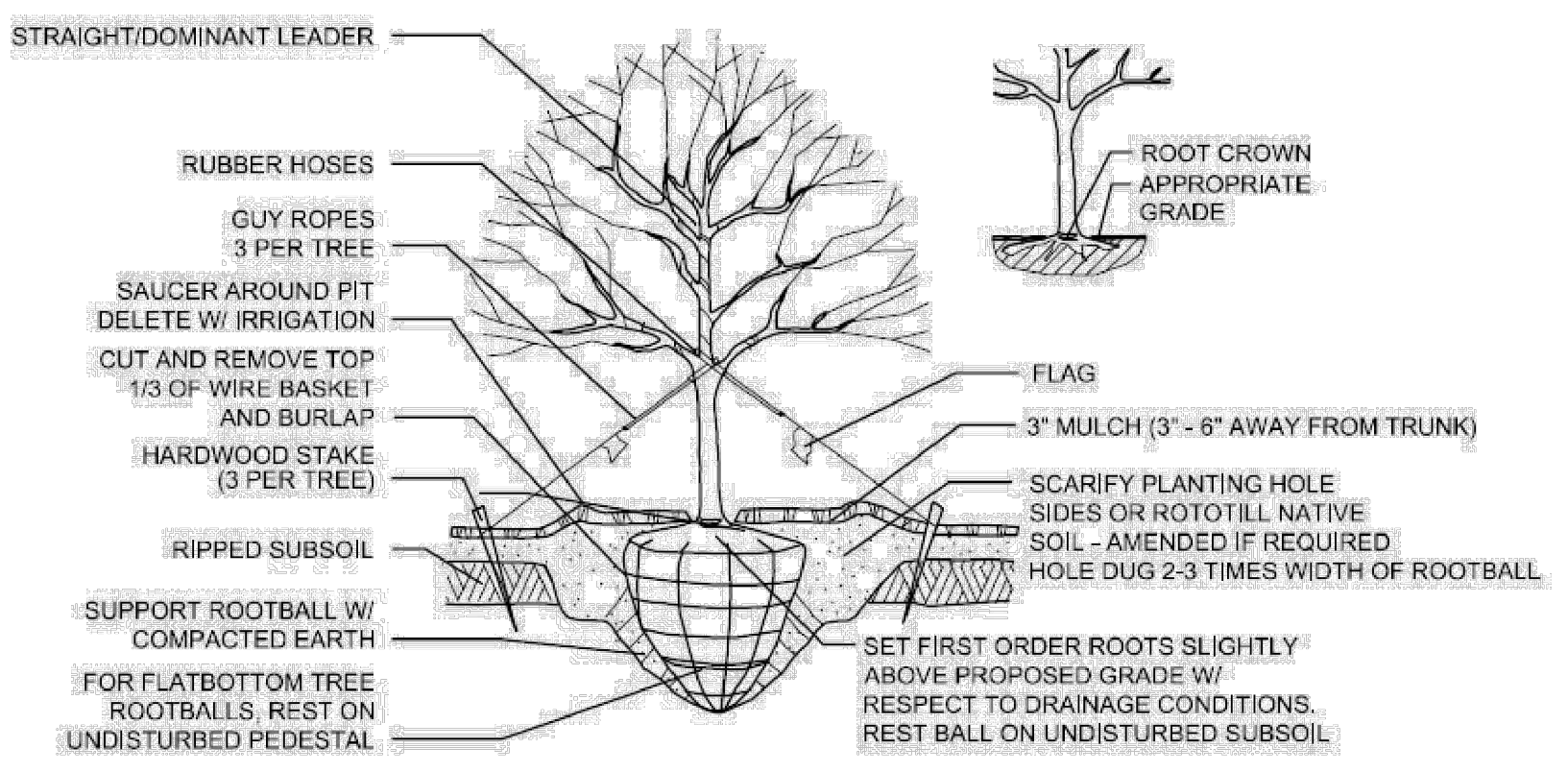


STEP #1
ROOT PRUNE WITH VIBRATORY PLOW, ROOT PRUNING MACHINE, ROCK SAW, OR SHARPENED TRENCHER.

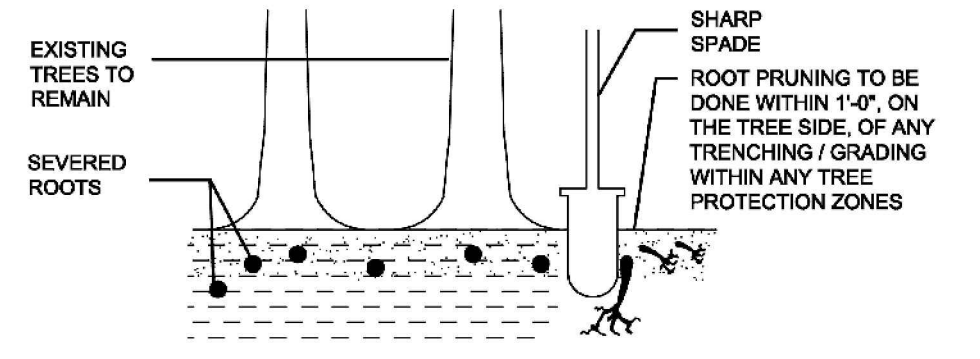


STEP #2
HAND PRUNE ROOTS THAT REMAIN FOLLOWING MECHANICAL PRUNING

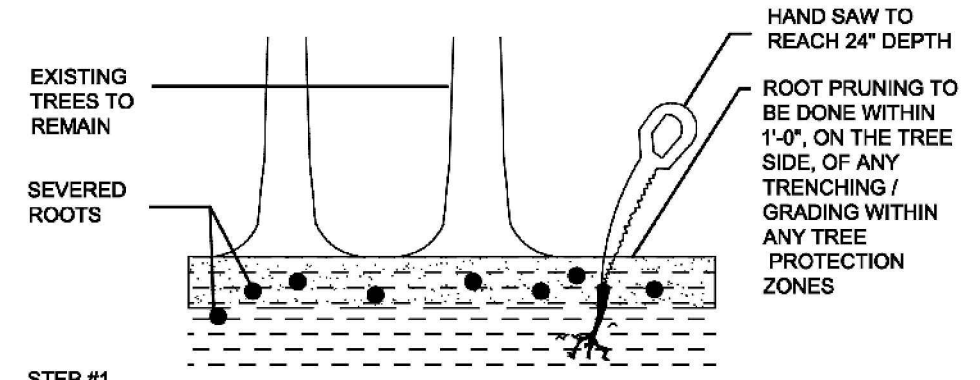
ROOT PRUNE MECHANICAL
SCALE :



TYPICAL TREE PLANTING DETAIL
SCALE :



STEP #1
PRUNE ROOTS LESS THAN 2" WITH SHARP SPADE OR PRUNING SAW. ROOTS 2" OR LARGER TO BE PROTECTED AND LEFT UNDISTURBED.



STEP #1
PRUNE ROOTS LESS THAN 2" WITH SHARP SPADE OR PRUNING SAW. ROOTS 2" OR LARGER TO BE PROTECTED AND LEFT UNDISTURBED.

STEP #2
PRIOR TO BACKFILLING TRENCH, CUT ALL ROOT STUBS WITH SHARP HAND SAW TO EDGE OF TRENCH.

ROOT PRUNE HAND
SCALE :

General Landscape Notes

- (1) All trees shall be a minimum of 2.5 inches in caliper and eight (8) feet in overall height at the time of installation and of a variety which shall attain a mature spread of at least twenty (20) feet.
- (2) All plant materials shall meet the minimum specifications and standards described in the most current edition of American Standard for Nursery Stock, 1986, published by the American Association of Nurseryman, 1250 I Street, N.W., Suite 500, Washington, D.C. 20005.
- (3) Planting season restrictions:
 - (i) All ball and burlap plant material shall be installed from October 15 to March 31, unless otherwise authorized by the Department of Recreation, Parks and Open Space.
 - (ii) All container grown plant material shall be installed from September 15 to May 15, unless otherwise authorized by the Department Recreation, Parks and Open Space.
 - (iii) Any other dates not listed above in this section shall be considered out-of-season. In such cases, a bond or other form of surety covering the cost of installation of all landscape material and construction shall be required in conformance with provisions set forth in section 17-12

Tree preservation fencing techniques

- (1) Installation of fencing: Approved protective tree fencing shall be installed along the outer edge of and completely surrounding the critical root zones of all trees marked for retention, prior to any land disturbance, and shall remain in place and in good repair until project completion. In no case shall the protective fence be installed inside the tree's critical root zone unless otherwise specified by the Department of Recreation, Parks and Open Space.
- (2) Grading and construction equipment: All grading and construction equipment, construction material, supplies, and vehicles shall remain outside of tree preservation fencing.
- (3) No materials shall be stored inside the tree preservation fencing.

Removal of trees designated for preservation

- (1) In the event that a tree designated for preservation is destroyed or permanently disfigured or significantly damaged during the construction process, the tree shall be replaced with a new tree or trees. The replacements shall total the same number of caliper trunk inches as that of the tree(s) destroyed in diameter at common breast height.

Tree Permit

- (1) A City Issued Tree Permit must be acquired if any tree pruning will be required on any of the trees within the right of way/ City of Norfolk property prior to any ground disturbance.
- (2) The City Issued Tree Permit will require a Certified Arborist to trim or remove trees on City of Norfolk Property/ right of way.

No.	REVISIONS	DATE	BY

Kimley»Horn

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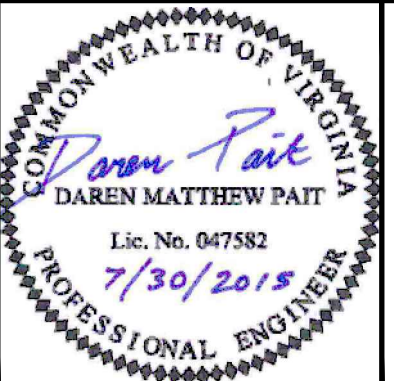
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JEFF ROBERTSON PARK STORMWATER WETLAND SITE PLAN #15-0014

PREPARED FOR
CITY OF NORFOLK

NORFOLK VA



PLANTING DETAILS

SHEET NUMBER

16